Paper
TRADE JOURNAL
PUBLISHED WEEKLY
AUGUST 25, 1949

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that is, nor trust some later day."
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Our extensive wood pulp resources include some of the finest grades of Bleached and Unbleached Sulphites and Sulphates, and enable us to give the maximum in service.

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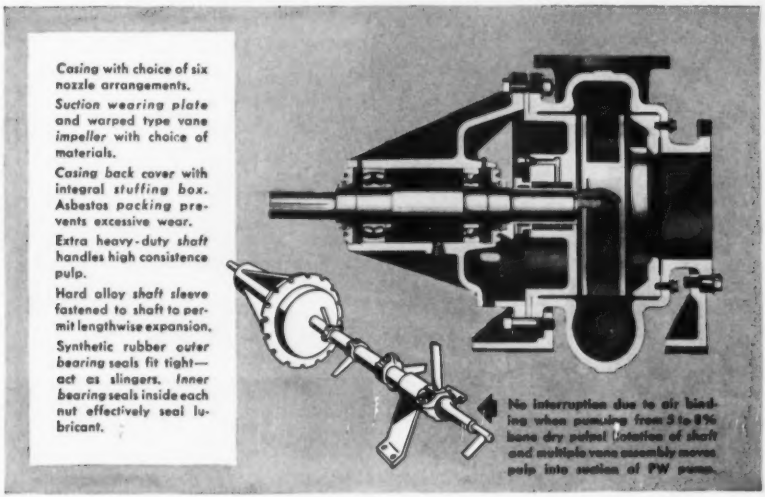
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▸ Eight sizes with capacities from 175 to 8000 gpm — heads to 140 ft. ▸ Suitable for direct drive. Merely loosen four base bolts and the motor slides back along the base on steel plates. This insures proper alignment after pump is dismantled or reassembled.

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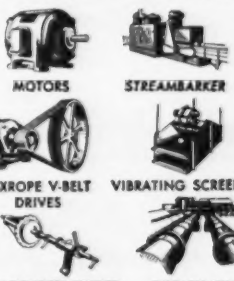

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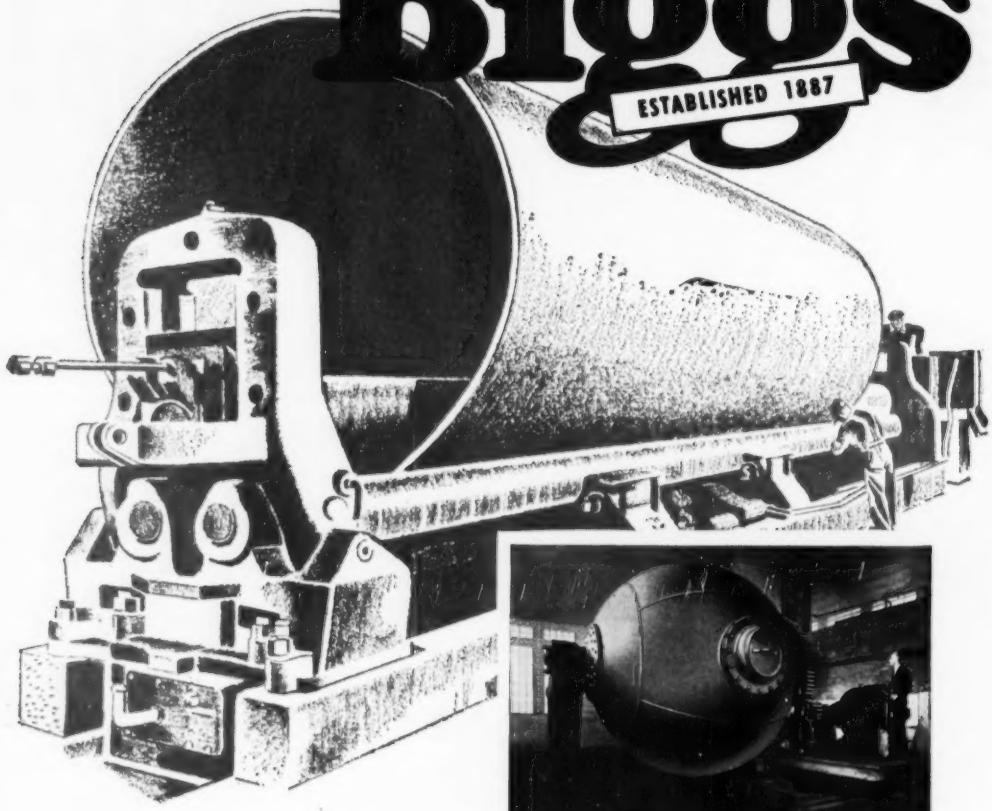

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MEMBER

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, August 24, 1949.

Market Firmness Crystallizing

Evidence that the power of the buying spurt is crystallizing into market firmness has wide trade recognition. Almost as generally accepted is its temporary nature. Buying is still limited to immediate production requirements, but tempo has been stepped up to provide for the increase in consumer demand. Undertone of all markets allied to the industry is firming, and boutonnieres of optimism reflect the changing trend.

Pulp Supply Tightens

Under the sudden impact of increased demand, known inventories of domestic and imported pulps appear either to have been bought up or to have been withdrawn from the market for "own consumption" by integrated mills. Scandinavian agents state that demand for spot deliveries has been very active in recent weeks. Norwegian stocks are reported to be available in fair quantities for the balance of the year with market prices firm. Market pulp consumers are now faced with the long-foreseen condition of not being able to get all they want when they want it from producing mills which have been on curtailed production for some months. Firming of prices also is reported.

Tightening of supply unexpectedly appears in unbleached sulfites and unbleached krafts where marked softening of supply had been widely-publicized. Northern unbleached kraft is not freely available, and southern mills are reported to show less interest in disposing of their stocks.

There is a strong inclination by mill buyers to appraise this firm supply condition as sales strategy from producers and agents to stabilize price levels before fourth quarter prices are set. Particularly is this true in southern unbleached krafts where the long-expected pickup in demand for shipping sack paper is still being deferred. However, large buyers of all grades report the disappearance of spot prices below quoted levels, also stress in getting immediate needs from long-time suppliers.

Industry spokesmen view the spurt in demand and tight supply as essentially temporary in nature. There is no buying for inventory in it and no speculative demand. Stocks are moving out, nonetheless, and producing mills will adjust to more nearly profitable levels than those at which most North American and Scandinavian mills have been operating. A degree of market stability has been attained, it is stated.

Paperboard Prices Rise

Indicative of the bullish market in paperboard is the rise in price of two grades of set-up box stock within the last ten days. *Plain chip* and *filled news* have advanced from $65 to $70 a ton in New York and other eastern markets.

In this market, greater support exists for the belief that the pickup is more like a turn in business thinking and planning than a buying flurry. The seasonal pickup which is due in early Fall manifested itself in late July, and has grown steadily stronger, so that mills are operating on six- and seven-day schedules with delivery promises lengthened to two and four weeks from the former few days. Production ratios have improved from 76 percent of capacity in late July to 84 percent for the week ended August 13, with tonnage production for that week within 3,000 tons of comparable week of 1948. New orders for the week ended August 6 were 7,000 tons ahead of 1948's week, and 4,000 ahead for the week ended August 13.

Demand for folding box is reported as unabated. A lively demand now exists for *set up* stock with the converting mills rushing to cover for themselves on a rising market for immediate needs as well as for holiday trade and inventory. Undertone of this market is described as bullish.

Waste Paper Firmer

Augmented consumption of waste grades for paperboard production and steady requirements of high grade cuttings and kraft-lined corrugateds for pulp substitutes has given new life to the waste paper industry.

Particularly strong in all markets is old corrugated, with prices rising $2 to $3 a ton and higher prices reported for spot lots, and inadequacy of supply manifesting itself as a result of unprofitable collecting activities. High grades of kraft cuttings also are firm.

High grades show no weakness anywhere, though mills are strict in their quality specifications. Here again a short supply is the inevitable result of cutbacks in mill production.

News grades are firming, with advances of $2 to $3 a ton asked. Ample stock of this grade exists generally.

A further cramp in the growth of this segment of the industry is the crippling 4 percent rise in freight rates due for September 1 which renders profitable shipment of waste papers and rags an impossibility.

Book Demand Accelerates

An active demand for book stock is reported in the fine paper field as publishers and printers ready themselves to meet advertising demands. All grades are said to be included in the pickup with heaviest interest in high grade *glossy's* and *machine coateds*. Small converters are said to be doing a good business and large volume mills to be on full production. Prices appear to be stabilized at present levels, although printers and publishers are reported to be lobbying to get discounts restored to former levels with the difference reflected in quoted prices, if necessary. The discount matter is a serious annoyance to them and their customers, merchants state.

Bonds and Ledgers Lag

No recovery can be noted in the bond and ledger field, though rag content mills report they are holding their own. A marked tone of instability is said to exist in sulfites as a result of special price cuts made by a few small manufacturers. Despite the firmness gathering elsewhere in the market, a marked expectation that prices must again shift downward is reported, and demand is being limited strictly to current requirements.

Newsprint Stocks Grow

Stocks of newsprint on hand and in transit at the end of July, 1949, rose to 49 days' supply, for the average of all dailies reporting to the ANPA, registering an increase of 10 days' supply compared with the end of June, 1949, and 5 days compared with end of July, 1948. (Building of stocks during July is considered normal.) Mill stocks at the end of July were reported by the Newsprint Association of Canada as 173,221 tons at Canadian mills and 12,176 tons at U.S. mills, a combined North American total of 185,397 tons; compared with 176,964 tons on June 30, 1949, and 155,622 tons at the end of July, 1948.

Production Indexes

Ratio of production of unbleached kraft paper to potential mill capacity for that product was 66.1 percent for the week ended August 13, compared with 65.1 for the preceding week, and with 95.8 for the corresponding week of last year.

Comparative ratios of U.S. paper and paperboard production to mill capacity, as reported by AP&PA, are:

	Aug. 13 1949	Aug. 6 1949	Aug. 14 1948	Aug. 16 1947	Aug. 17 1946
Paper	85.0	283.3	96.1	104.8	104.5
Paperboard	84.0	82.0	93.0	100.0	98.0

‡ Revised.

Paperboard Production (Tons)

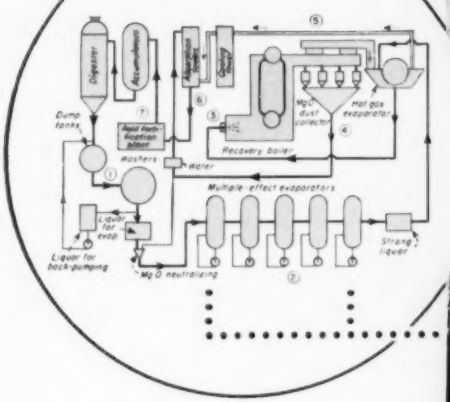
	Aug. 13 1949	Aug. 6 1949	Aug. 14 1948
Production	181,138	171,094	184,342
New Orders	169,424	229,445	165,194
Unfilled Orders	311,124	323,864	375,515

Percent of Activity, Current, 84%; Year, 78%.

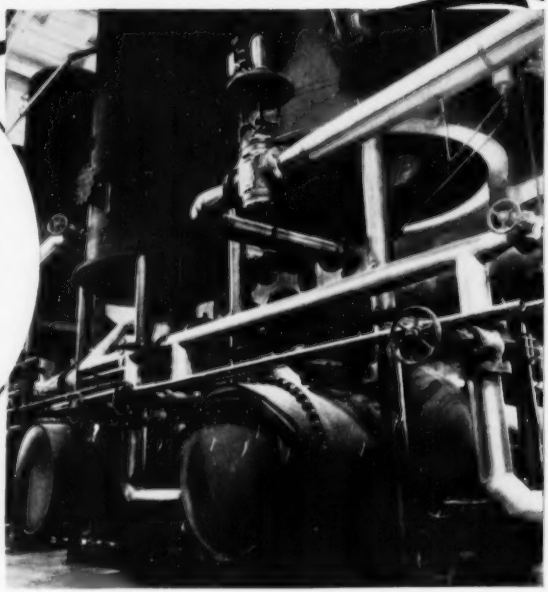
General Business Indexes

Index of general business activity for the week ended August 13 inclined to 141.7 from 139.5 in the preceding week, compared with 149.5 in the corresponding week of 1948. Index of paperboard production climbed to 179.3 from 169.7 in the preceding week, compared with 181.4 in the corresponding week of 1948.

Sulphite waste recovery system COMBATS CORROSION



Flow chart for this new system at Weyerhaeuser Timber Company's Longview, Washington, pulp mill.



All vessels and vapor lines in this evaporator are Lukens 20% Stainless-Clad Steel, built by General American Transportation Corp.

. . . with Stainless-Clad Steel

Recovery of sulphite-process chemicals, elimination of stream pollution, steam for process and power generation—these are the advantages of this new process. It employs magnesium oxide as the base for the cooking liquor, instead of the usual calcium oxide.

Lukens Stainless-Clad Steel, used in the quintuple effect evaporator pictured above, combats corrosion in case liquors and vapors become acid in character. Because stainless steel is only 20% of total plate thickness, the economies gained by using clad steel made it feasible to proportion vapor lines and vapor bodies generously to take care of considerable overloads.

Should your conditions require the protection offered by nickel, Inconel or Monel, Lukens makes a complete line—Nickel-Clad, Stainless-Clad, Inconel-Clad and Monel-Clad Steels. In each, the cladding is permanently bonded to its backing plate. All are available in the extra-smooth sodium hydride finish.

Send for Bulletin 470, giving information on clad steels in the Pulp and Paper Industry, or Bulletin 449, a general bulletin on Lukens Clad Steels. Lukens Steel Company, 403 Lukens Building, Coatesville, Pennsylvania.

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Nickel-Clad Stainless-Clad
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Straight-Flow Port Design reduces fluid turbulence to a practical minimum.

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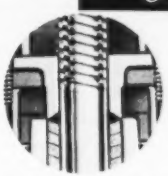

Brass Liner on Glands assures greater resistance to corrosion and scoring.

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iron body gate valves

with screwed or flanged ends

... 8 Outstanding Features

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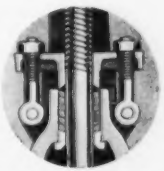
T-head Disc-to-Stem connection on OS&Y types provides stronger connection, prevents loosening of disc by corrosion.

Bronze Back-Seat Bushings in bonnets of OS&Y valves.

Solid Web Type Disc in OS&Y valves for greater strength and longer service.



Hinged Gland Eye-Bolts on OS&Y valves permit faster, easier repacking under full pressure.

Paper TRADE JOURNAL

News of the Week

MILLS

Zellerbach Sees Italy Recovering

SAN FRANCISCO.—Part of the progress toward building back Italy's economy was disclosed here on August 15 in a report to his employes from J. D. Zellerbach, president of the Crown Zellerbach Corp., who is one of the administrators of the Marshall Plan.

Mr. Zellerbach, who has been in Italy almost one year, said the country is using ERP funds and supplies to bring up the efficiency of her railroads, build up her merchant marine, develop great power stations, bring hundreds of thousands of acres in land under irrigation, build highways, workers' homes and provide jobs.

Revealing that he had recently (July 12) visited Genoa to welcome the one-thousandth European Recovery Program ship to Italy, Mr. Zellerbach declared:

"It was certainly not the most gleaming ship in the world, because its cargo was coal. Nevertheless, the ship deserves a footnote in Italian economic history, because it marked the fact that 1,000 full cargoes of coal, wheat, cotton, petroleum, machinery and general merchandise have arrived in Italy under the Marshall Plan.

"The cargoes have contributed greatly to the economic stability that Italy now enjoys. They have acted as a weight on the inflationary spiral in which Italy was caught in the autumn of 1947. They have helped produce a relative stability in prices and in the cost of living in Italy for more than a year. Moreover, they have injected confidence into Italy's economy."

Harper Awarded Safety Degree

CHICAGO—The first advanced degree in safety engineering ever to be granted in the history of education in the United States was awarded to George W. Harper, director of safety for the Mead Corp., in ceremonies at Ohio State University, Columbus.

The Degree of Master of Science in Industrial Engineering (Specializing in Safety Engineering) was given to Mr. Harper at commencement exercises on June 10, and culminated a two-year program of study under the guidance of Dr. Paul N. Lehoczky, head of the department of Industrial Engineering.

Mr. Harper has two other degrees and has taken other graduate work. He has been very active in safety work outside his position at Mead, and is vice-chairman of the Pulp and Paper Section of the National Safety Council.

Mr. Harper, in addition to all this work, found time to enter the Paper Mill Superintendents' contest and won a prize for his essay.

AWP Combines Offices

HOLYOKE, Mass. — The American Writing Paper Corp., reports that following the death of William J. Norton, former treasurer of the corporation, that office has been combined with the office of secretary. Atty. Charles L. Kirkpatrick, secretary of the corporation since 1943, has been elected to the new combined position. He has been associated with the AWP board of directors for the past 11 years.

WARD HARRISON

—elected vice-president in charge of production of the Riegel Paper Corp., New York City, on August 23. . . Mr. Harrison will continue to direct production at all Riegel plants, which are in Milford, Warren Glen, Hughesville and Riegelsville, N. J., and to be responsible for activities on the company's timberlands at Acme, N. C. . . Mr. Harrison is a graduate of Iowa State College, Ames, Ia., and holds a Ph.D. degree from the Institute of Paper Chemistry, Appleton, Wis. . . He was with Riegel from 1936 to 1941 in development work. After seven years with Ecusta Paper Corp., Pisgah Forest, N. C., he returned to Riegel in 1948. . . Mr. Harrison is a member of the American Pulp & Paper Mill Superintendents Ass'n., TAPPI, and the American Institute of Chemical Engineers.

Building $4,000,000 Holyoke Dam

HOLYOKE, Mass.—Work on erection of a $4,000,000 hydro-electric generating system at the Holyoke Dam will be launched by September 1, paper manufacturers have been informed.

The Holyoke Water Power Co., representative of the century-old indentured water rights of the city's paper mills, on August 16 awarded the contract for building the tail-race and substructure for the new 15,000-kw hydro-electric station to Daniel O'Connell & Sons, Inc. Robert E. Barrett, Jr., president of the power company, said the contract would run to about $500,000. The tail-race will begin at a point near the dam and run 2,800 feet to a point about 1,000 feet below the South Hadley Falls bridge.

The Federal Power Commission recently granted the license to the Holyoke Water Power Co., for this undertaking, following a spectacular public hearing here in February and March, in which the city-owned Municipal Gas & Electric Department sought a similar license. The Massachusetts Department of the Public Works earlier this month held a hearing on the development project and has granted it an authorization. There was no municipal protest registered at the state hearing by the Gas & Electric Department.

The O'Connell firm will start by September 1, Mr. Barrett said, and will work as long as the low water season continues. This phase of the immense undertaking will not be finished this year, and completion will await the 1950 low water season.

Diamond Match Co. Oscar Contender

NEW YORK—From 4,200 corporation annual reports for 1948 submitted in the annual survey conducted by *Financial World*, that of the Diamond Match Co. has been selected as qualified for the publication's highest merit award. The Diamond report has been classified with the reports of nine other companies in the paper manufacturing and converting fields. Selection of one of the ten finalists as Best of Industry will be announced on October 31, when the winner will receive a bronze Oscar of Industry.

Waters Elected Mersey President

LIVERPOOL, N.S.—B. J. Waters has been elected president of Mersey Paper Co. Mr. Waters was formerly general manager of the company, while Col. C. H. L. Jones was president and managing director.

TOO GOOD TO WASTE, ISN'T IT?

Worried About Stream Pollution?

The Bird Save - All takes out the bulk of the fibres and what water is not re-used is in perfect shape for efficient, economical treatment before final disposal.

That's good paper stock coming off the Bird Save-All couch roll and going right back to the machine chest — stock that has already gone through all the costly preparation and is ready to be made into "pay" paper.

You don't need to be told how quickly that recovered stock will pay for the Save-All system.

Are *you* letting *yours* go down the drain? If so, give us a chance to figure the size of the immediate return on a Bird Save-All installation.

BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS

N. W. Ont. Lumbermen Assail Paper Industry

By CHARLES H. L. REID

TORONTO—The old complaint by lumber operators that the provincial government favors the pulp and paper industries in awarding woods limits and giving them exclusive cutting rights has flared up again along the North Shore of Lake Superior. The controversy has reached the stage where many harsh things are being said and public meetings are being held. Some sawmills have already been closed down and predictions are being heard that unless something is done to provide sawmills with more sawlogs there will be as many as 8,000 mill workers idle during the coming winter.

The controversy appears to be tinged with provincial politics because Northwestern Ontario is not the only part of Canada with sawmill troubles. Out in British Columbia, 39 lumber operators are either shut down or partly closed and payrolls number 4,000 less than last year. The loss of this business was credited to the inability of the United Kingdom to buy lumber in a dollar area.

With the threat of much unemployment hanging over the head-of-the-lake area, business of all kinds is affected and the labor unions, municipal authorities and provincial representatives have all gotten into the act. A public meeting was held in Fort William city hall August 18 and for four hours that night the trouble was discussed by representatives from all the factions. The failure of the provincial government to implement the recommendations of the forestry report made by Maj.-Gen. Howard Kennedy a few years ago seemed to be the major criticism.

Prominent in the discussions was Edward E. Johnson, president of the Great Lakes Lumber & Shipping Co., the largest single operator in the province. He said that by winter there would be 8,000 men out of work in the Thunder Bay area, unless the "government gives the lumbermen a square deal" and repeated that his Fort William mill will close in November "unless the government stops catering to pulp and paper interests."

Secure in the knowledge the government was behind them, paper companies were ruthlessly stripping the forests of the trees fit for their operations and leaving the balance to rot under the ravages of the budworm, Mr. Johnson charged.

"There are 2,500,000 cords of spruce and balsam on Great Lakes Pulp & Paper Co. property which have not been salvaged," he asserted. "It is now useless and destroyed because the company insists on taking out high-grade timber as it sees fit. This is one of the crimes of the century. It is an act of ruthless high-grading, whereby they cut poles and sawlogs and leave the small stuff for sawmill operators."

Mayor Fred Robinson of Port Arthur, a member of the provincial parliament, said lack of action on the Kennedy report was "confusing and disappointing." Submitted in 1947, after exhaustive hearings which saw large and small operators appear before Gen. Kennedy, the report was hailed by forestry experts as containing the formula for the salvation of Ontario's forestry resources. The report said the timber situation demanded drastic overhauling; it urged immediate salvage of budworm-infested areas; it suggested strongly that discrimination had been shown against lumber camp operators by the disposition of timber rights to pulp companies.

"That Kennedy report was courageous," Mayor Robinson said. "I thought so much of it I advised that it should be put into every library and

PORT ALICE, B. C., PLANT WINS TRIPLE SAFETY AWARDS

Approximately 600 Port Alice, B. C., employes and their wives were guests of the British Columbia Pulp & Paper Co., Ltd., at a presentation ceremony in the Community Hall recently to celebrate winning of triple safety awards for 1948. . . Following a cocktail hour, L. Manley, secretary-manager of the Canadian Pulp & Paper Ass'n., (Western Branch) presented the Association's Safety Shield, to R. Stewart, who with 31 years service in Port Alice, accepted the award on behalf of his fellow workmen. This is the second year the Port Alice Plant has won this award. . . Commissioner E. V. Ablett of the Workmen's Compensation Board, presented the Western Forest Products Safety Ass'n. (Pulp & Paper Section) Award to L. L. Greig, who represented Local 514, International Brotherhood, Pulp, Sulphite & Paper Mill Workers Union. This award was won in competition with mills in the Northwestern United States and British Columbia. . . Carl Lowe, manager-director of the Seattle Safety Council, representing the National Safety Council, Inc., presented the "Distinguished Service to Safety" Award to P. McGhee, plant manager. . . Lawrence Killam, president of the company, thanked all those concerned for the co-operation and support they had given to the Safety Division during the past years, which was instrumental in the winning of these awards. . . Safety Director Ed Tucker, chairman of the evening, added his thanks and appreciation to those of Mr. Killam, and asked for the continued support of all, in an effort to maintain the low record now held. . . A frequency rate of 1.33 for 1948 was established, believed to be the lowest in the history of the Pulp & Paper Industry, (Manufacturing Plants) in British Columbia. . . In addition to those mentioned above, other out-of-town guests included Mr. & Mrs. Jordon of St. Helen's, Ore.; Chief Inspector Arthur Francis, Inspector J. H. (Harry) McLean (both of the British Columbia Workmen's Compensation Board), and Leo C. Kelley, general superintendent of mills, British Columbia Pulp & Paper Co., Ltd. . . At the conclusion of the presentations, a dance and buffet supper wound up the evening. . . In the larger picture are: Standing—Messrs. McGhee and Lowe. Seated—Messrs. McLean, Manley and Tucker. Inset shows the triple safety awards.

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Du Pont Sulfamic Acid* gives better softening plus fire resistance in one low-cost treatment

The chances are that you can sell softer, fire-resistant paper for all of these uses—plus many others, too. And you can make it easily with Du Pont Sulfamic Acid.

Just add Sulfamic Acid to the desired amine to get an Amine Sulfamate that both softens your paper and makes it fire-resistant—with *single* immersion or spray treatment.

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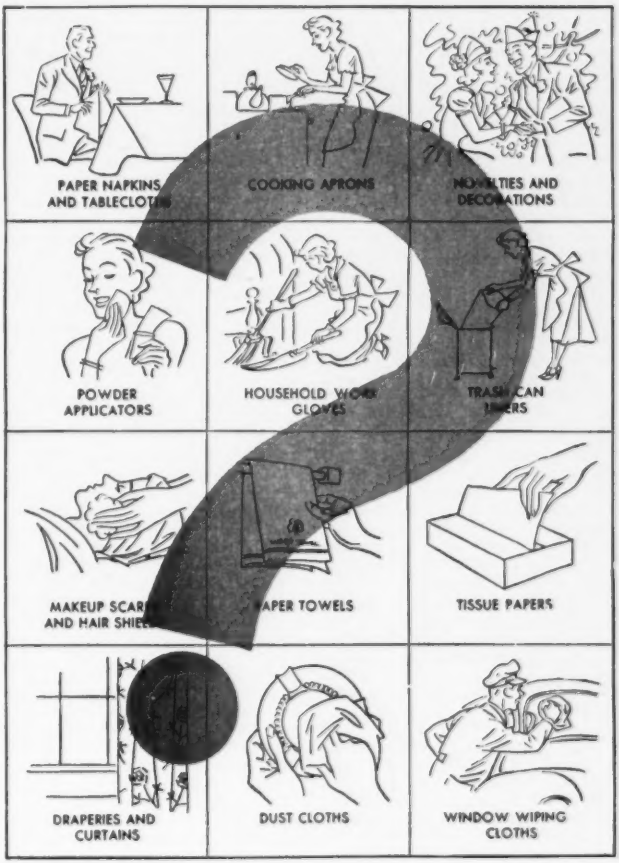

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school. It is a bible for anyone interested in lumber. And yet, what happened? The government hasn't done a thing to implement its suggestions."

Time and again during the hot discussion in Fort William's high-ceilinged city hall the pigeon-holing of the Kennedy report by the Drew administration was attacked by delegates, who represented every shade of the lakehead's economic life. The meeting was called by the committee on unemployment of the Fort William Trades and Labor Council and was supposed to be non-political, but the Kennedy report and its association with the Conservative government, unavoidably introduced party politics. Mr. Johnson and John Currie, Great Lakes Pulp & Paper Co., who at the time of the report was labor council secretary, tangled frequently concerning timber and pulp operations.

To grant lumbering concerns permission to enter timber preserves of Ontario pulp companies would be worse than "inviting a tramp into your home for supper," was the answer of an executive of one of the province's leading pulp concerns. Officials in the pulp industry are unanimous that any invasion of their forest lands would mean the ruin of Canada's great pulp industry. They also say the industry has been "more than cooperative" in meeting the demands of the lumber mills for more logs.

The reaction of an official of the Abitibi Power & Paper Co. to the Fort William charges was: "It's an old story. I can imagine where it comes from. We have gone out of our way to cooperate with the lumber business. If these fellows have anything to say, they ought to report it to the government and find out what's the score."

Like other pulp company officials, this executive was inclined to put the blame for the present uproar on the Great Lakes Lumber Co. "This company has been contending it is short of sawlogs. This is not right at all. These fellows seem to draw on their imagination."

An executive of Great Laper Paper Co. said certain Fort William mills were going out of their way to stir up labor "in order to put a black mark on the paper industry." This official continued: "We have produced many, many thousands of logs for these very lumber mills. Yet often, while we have produced them, they have refused to take them."

Labor unions are divided on the issue, the A. F. of L. Lumber & Mill union has lined up on the sawmill's side, while the paper mill union supports the paper mill companies.

Frank MacDougall, deputy minister of lands and forests, said the government hoped for an answer to the problem when a forestry inventory, now under way, was completed "some time next year."

Mr. MacDougall also stated that for ten years the provincial government has been trying to find a balance of timber disposition satisfactory to both pulp mill and sawmill operators. He noted that the Great Lakes Lumber & Shipping Co. mill was built in 1940, when cutting rights had already been granted to pulp and paper firms. At that time Mr. Johnson's company held timber limits comprising some 425 square miles, along with owning the Little Pic limit. These areas have since been disposed of, Mr. MacDougall said.

Statistics quoted by Mr. MacDougall indicated that since 1941 the Great Lakes Lumber Co. had a total of 158,318,000 feet of logs cut by the company or supplied to it by others and that a six-year contract with the Great Lakes Pulp & Paper Co. had been terminated. Mr. MacDougall stated that the lumber company once asked for cutting rights to 30,000,000 feet of red pine in the Red Lake area of northwestern Ontario. Tenders were called, the deputy minister said, but Mr. Johnson's company did not bid.

Meanwhile, the city council of Fort William, eager to prevent the closing of any more sawmills, appointed a budworm committee and the Chamber of Commerce asked the minister of lands and forests for an opinion on the subject of budworm-infested logs going to waste. In reply, the minister minimized the danger of the budworm situation and declared the government was pushing a plan of salvage. After touring the budworm infested forest areas, which comprise about 20,000 square miles, the Budworm Committee reported as follows:

"It is hereby resolved that the parliament of the Province of Ontario be petitioned to revise the contracts already in existence, whereby tracts of forest areas are given over to private paper companies, to permit those forest resources to be utilized in the interests of all types of industry and all the peoples of the province, and that the deciding factor in how these materials shall be so used shall remain in the hands of government agencies instead of allowing the experts employed by said paper companies to have sole say as to what shall be done, and who shall have access to those leased properties, and upon what terms.

"It is hereby resolved that the expressed policies of the paper companies with respect to keeping the public out of the leased properties be hereby immediately revoked, and that, despite the danger of fire and other hazards created by public admittance, these lands be hereby opened to tourists and game and fish enthusiasts, thereby securing for the people of Ontario additional millions of dollars of annual revenue from these additional sources.

"We enjoin our legislators that those discriminatory practices against the lumber companies as contrasted with the paper companies be repealed, and a fair method of taxation instituted which will secure equality of opportunity for all types of industry and prevent monopoly by any one type.

"This committee hereby requests the parliament of Ontario to declare a policy which will permit both lumbering and paper making industries to exist side by side as is done in Scandinavia, and to make government inspectors the judges as to what timber shall be allocated to each, or, alternatively, that cutting rights be given impartially to each, instead of, as at present, permitting the paper companies alone to decide what shall be done, when it shall be done and upon what terms."

The Budworm Committee holds that there is more than enough wood in Northwestern Ontario to supply the needs of both pulp and paper mills and the lumber industry. Members are basing their conclusions on the Kennedy report, which declared "at present the pulp mills are using a type of log which in size would be utilized to better advantage by the sawmills, and which, if carried out, would ensure adequate supplies for both industries."

Joint Comm. Inspect Passamaquoddy

EASTPORT, Me. — Paper manufacturers throughout New England learned that the Passamaquoddy Bay power project which would harness the tides of the Atlantic Ocean may be revived, when an American and Canadian joint commission on August 15 prepared for a five-day inspection trip and discussions, to determine the feasibility of the project.

The United States spent $7,000,000 in 1935 before abandoning a $35,000,000 project to tame Quoddy's power. The present commission, jointly financed by the United States and Canada, will make a cost survey of revival of the project.

Hawkins "Sees" for Blind Boys

SAN FRANCISCO.—Students from a Vancouver, Wash., school for blind boys "saw" through the eyes of Glen Hawkins, superintendent of the Crown Zellerbach Corp. tree farm in Columbia, recently. "You are looking toward the East at a great hill area with many valleys," he told the boys. "All of it is covered by millions of young trees about your own age and less, trees which will be ready for our own pulp and paper mills in your time."

A Million Safe Hours

CARTHAGE, Ind.—Container Corp., of America's mill here recently completed one million man-hours without a lost-time accident. This represents a perfect safety record extending over 861 days of operation.

The Carthage Mill includes two machines for the production of strawboard and one for the production of liner board. Personnel averages 180 people.

Sonoco's Sets Safety Record

HARTSVILLE, S. C.—Sonoco Products Co., has worked 67 days without a lost-time accident or 515,000 man-hours toward its goal of 1,000,000.

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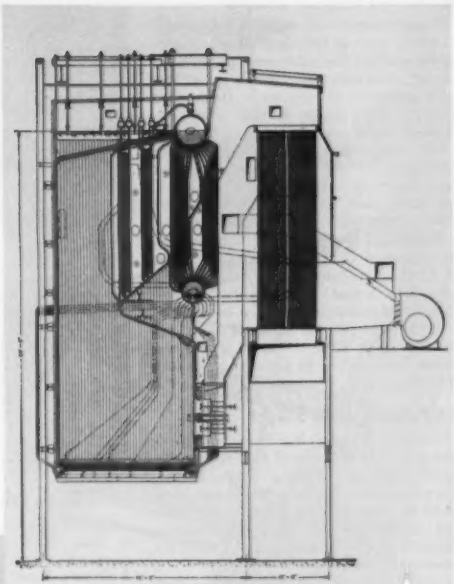
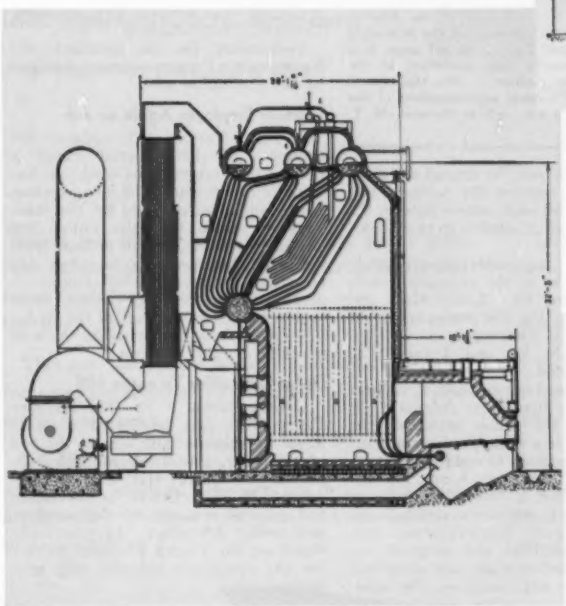
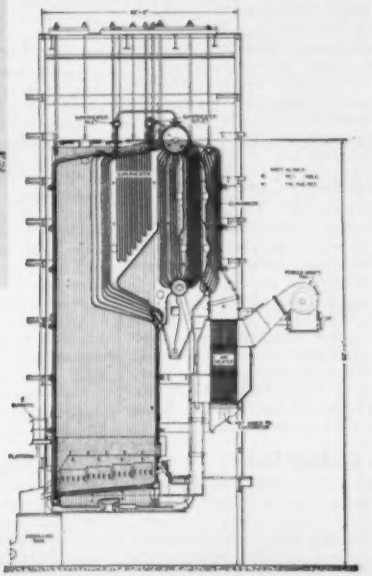


B&W Two-Drum Stirling Boiler, oil- and gas-fired. Also available in four-drum and integral-furnace types.



B&W Four-Drum Stirling Boiler with special bark furnace. Also available in two-drum types.

B&W Black Liquor Recovery Unit.



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P45

Chilean Mill Program Delayed

WASHINGTON.—A delay of approximately a year in the date of commencing operations for additional paper producing facilities of Chile's principal manufacturer, is reported from that country. This would indicate that production might start in mid-1950.

The proportion of newsprint to be developed by the new plant has not been reported. This plant, it is stated, will be a part of the installations of Chile's principal paper manufacturer, in Valdivia, the name of which was not reported in the cabled advices to the U. S. government.

Reports stress that Chilean newsprint production is steadily mounting, in keeping with an upward trend in demand. For 1949, Chilean newsprint output is expected to amount to 7,000,000 kilograms.

Anti-Pollution Data Sought

NIAGARA FALLS, N. Y.—The International Paper Co. and the Kimberly-Clark Corp. are among some 30 Niagara Frontier plants which have been asked to submit complete data on what they intend to do about eliminating pollution of the Niagara River through industrial wastes.

Public hearings on the problem will be held in this area on November 15-16 under auspices of the International Joint Commission, an American-Canadian body which has been directing a comprehensive survey of Niagara River pollution and its causes for the last year.

Wage Negotiations Localized

MECHANICVILLE, N.Y. — Announcement was made here on August 19 that employes of the local branch of the West Virginia Pulp & Paper Co., are not affected by recent negotiations between company officials and representatives of the International Brotherhood of Papermakers at Roanoke, Va. The union had sought the equivalent of an increase of 30 cents hourly for 4,000 employes at Covington, Va., Luke, Md., and Williamsburg, Pa. The local firm, as well as mills in Charleston, S. C., and Tyrone, Pa., were not included.

Long Heads Safety Campaign

CUMBERLAND, Md. — The Allegheny County "safety week" campaign to be held in September under the sponsorship of the State Industrial Accident Commission will be headed by John J. Long, safety director of the West Virginia Pulp & Paper Co.

Among others asked to serve on the campaign committee are Thomas C. Gulland, safety supervisor of the Hercules Powder Co. and M. W. Work, safety director of the Amcelle plant of the Celanese Corp. of America.

Westvaco Contract Status

ROANOKE, Va. — Representatives of West Virginia Pulp & Paper Co. and of the United Paperworkers of America, CIO, meeting here, agreed on August 17, subject to ratification by the Union membership, to extend the present contract between the company and the union until such future date as the Union may select, subject to two weeks' notice.

The union represents approximately 4,000 employes at the company's mills at Covington, Va.; Luke, Md.; and Williamsburg, Pa. The company's other three mills, at Charleston, S. C.; Mechanicville, N. Y.; and Tyrone, Pa., are not affected.

Company and union negotiators have been meeting here since August 8, on which date the union presented the company with a package demand estimated by the union to equal a wage increase of 30 cents per hour. The demands included a 15-cent increase in hourly pay, life insurance, sickness and accident benefits, hospitalization, provision for medical and surgical expense, shift differentials, and additional paid holidays and vacations. The minimum hourly rate at the mills involved is currently $1.15.

At this time the company said these demands would "cripple" the company competitively, pointing out that its chief competitors had recently concluded contracts without any general wage increase or other substantial additions to costs.

In addition to the money demands the negotiators have been discussing various aspects of the contract, such as seniority, governing the general working relationship between the company and the employes represented by the union. While tentative agreements were reached on a few minor points, no definite commitments were made by either side and the major issues developed by these discussions remain unsettled.

It was agreed by spokesmen for both parties that, while the agreement to extend the contract leaves many serious questions still open, negotiations to date have proceeded with a dignity and absence of bitterness somewhat unusual in such meetings. The chief reason for extending the present contract, it was explained, is the uncertainty surrounding the general economic outlook, especially uncertainty as to the outcome of current issues in the steel, motor, and other important industries.

It will be up to the union to decide, a company representative said, when or if the time is ripe for another meeting. Harry E. Scott, area director for the UPA-CIO and chief negotiator for the union, said that the union would report to and follow the instructions of its members.

Negotiators for the union, in addition to Mr. Scott, included: Temple L. Kessinger, president, Local 675, Covington; Wayne Ritchie, president, Local 676, Luke; and Kenneth Fry, president, Local 677, Williamsburg.

Spokesman for the company was Raymond C. Crush, assistant manager of the Covington mill.

E. L. McCORMACK

—recently appointed special assistant to T. R. Stein, resident manager of the International Falls (Minn.) division of the Minnesota & Ontario Paper Co. . . He will serve in a consulting capacity over operations of the pulp and paper division. . . Mr. McCormack previously was general superintendent of the St. Regis Paper Co., mill at Deferiet, N. Y.

Imperial Employes Again on Job

HUDSON FALLS, N.Y.—About 400 employes of the Imperial Paper & Color Corp. returned to work on August 22 at the end of a labor controversy which started July 8. The management stated that the union had agreed to return the men to their positions and that mediation meetings will be arranged to settle the differences. A pension fund and a pay increase were said to be the main issues of the strike. The controversy did not affect the wall paper division of the firm.

Dollar Difficulties Threaten Mill

CORNER BROOK, N. F.—The Bowater Paper Mills may be forced to close down its sulphite mill here at the end of this year, the Newfoundland Federation of Labor was told in mid-August. H. M. S. Lewis, vice-president and general manager of the concern, said dollar difficulties had practically wiped out the United Kingdom market for the company's sulphite pulp production.

Ottawa River Co. Names Sullivan

TOLEDO, Ohio—Frank J. Sullivan has been named area sales manager here for the Ottawa River Paper Co.

He will have charge of sales in Northwestern Ohio, Southeastern Michigan, and Eastern Indiana.

Mando Ups Plain

MINNEAPOLIS—U. L. Plain has been appointed assistant sales manager of the insulite division of the Minnesota & Ontario Paper Co. He was formerly assistant to the vice-president in charge of sales.

Here it is!

A new booklet, packed full of money-saving information for paper mill superintendents, engineers, maintenance men, operators

Would you like to know how leading paper mills have gained up to *ten years'* service from paper and board machines . . . and cut upkeep costs all along the way?

This new fact-packed booklet, published especially for paper and board mill men, will tell you that . . . and much, much more.

It will show you how to cut maintenance costs on filters, bleach washers, wet machines, board machines, dandy rolls — wherever rust, excessive wear, and corrosion are a threat.

Included, too, are tables showing the correct type of metal cloth to use for filters, save-alls, deckers, cylinders, and similar equipment . . . with instructions for best method of brazing, soldering, and welding.

To help you with design and fabrication problems a valuable descriptive list of important INCO Nickel Alloys is included, with sources of supply near you.

Remember . . . just one of the many helpful hints in this new booklet may save you money for years to come. Send for several copies today and route them to interested members of your plant staff.

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Movies Convince Commission

LUKE, Md.—Through the medium of motion pictures, the West Virginia Pulp & Paper Co. has won in its case against a former employe who had previously been awarded total and permanent disability in the amount of $7,500. The company had petitioned the State Industrial Accident to reopen the case.

Horace P. Whitworth, Sr., attorney for the company, said recently that the commission has notified the company that in a review of the case in which the ex-employe was granted the award it has been decided to uphold the company's contention.

The ex-employe was awarded $1,500 by the commission as a result of a fall at the plant. Later she appealed to Circuit Court and a jury granted her the full amount of $7,500 in the claim.

The company's Safety Department, working in conjunction with Mr. Whitworth, decided to send a photographer to take pictures of her. The photographer took photographs of her playing badminton and other games. The films were shown to members of the State Industrial Accident Commission here on June 2 and the commission handed down its verdict shortly thereafter.

The company had paid the ex-employe about $3,000 since the jury verdict in 1946. The commission in its decision cut the award to the sum she has so far received.

Nimmo to Racquette River Co.

POTSDAM, N. Y.—Robert K. Nimmo has been named general manager of the coating division of the Racquette River Paper Co. Previously he was president of Northeast Paper Converters, Pawtucket, R. I. In 1948 he served Van Gelder Zonen of Holland as a consultant on paper coating.

The Racquette River Paper Co. has an entirely new coating plant in operation. Items planned to be introduced are reported to include box coverings, luggage papers, leatherette papers and others. The plant is also equipped to produce functional coatings, waterproofing, heat-sealing and other products.

MacDougall to New York

EAST WALPOLE, Mass. — H. W. MacDougall will be transferred on September 15 to the New York office of the Hollingsworth & Vose Co., at 41 Park Row, to succeed Stanley O. Styles, who on that date will become associated with the National Paper Trade Ass'n., as assistant secretary, concentrating primarily in the fine paper field.

Hudson R. Mill Safety Comm. Meet

CORINTH, N.Y.—D. B. Chant, for the past several years secretary and safety engineer for the Ontario Pulp & Papermakers Safety Ass'n., was principal speaker at a recent meeting of the Hudson River Mill Safety Committee, in the conference room of the International Paper Co., and A. B. Copping, mill manager, reviewed the accident record of the plant for the first six months of this year.

Mr. Chant, a Canadian of English-Scotch ancestry, spent his early years in lumbering and construction work in various capacities from laborers to paymaster. This was followed by 30 years in the paper industry, successfully as laborer, papermaker, personnel manager, safety engineer, mill manager and industrial relations director. The principal object of his association is accident control in the mills and woods operations of the pulp and paper firm in Ontario. He is a member of the technical section of the Canadian Pulp & Paper Ass'n., and is past general chairman of the Pulp and Paper Section, National Safety Council. The meeting was attended by all mill supervisors and foremen.

Swelling Community Chest

NEW YORK.—Added to the media generally used in publicizing local Community Chest drives are grocery bags, imprinted with the Red Feather emblem. The bags are available through Union Bag & Paper Corp. Leonard J. Doyle, vice-president in charge of bag and paper sales, said that Community Chest headquarters in New York have approved this use of the symbol. "Union pioneered the idea of printing this emblem on grocery bags and sacks," Mr. Doyle said, "and we are the first bag manufacturer offering this Community Chest imprint to the local retailer.

Ohio Boxboard Slogan Contest

RITTMAN, Ohio—The Ohio Boxboard Co., operated a plant-wide safety slogan contest sponsored jointly by the Carton Division safety committee and Boxboard safety department. Russell Steiner of the Stores Department was declared winner of the ten dollar grand prize. His entry was "Work Safely Always." This winning slogan was posted on bulletin boards throughout the plant, at entrances, on inter-plant trucks, and on time cards.

South's Foremost Business Leaders

ASHEVILLE, N.C.—Reuben B. Robertson, president of the Champion Paper & Fibre Co., and Harry H. Straus, president of the Ecusta Paper Corp., have been named among the South's foremost business leaders. The nomination came from "Dixie Business," a Southern business magazine published in Atlanta.

Central's Roen to Cincinnati

CINCINNATI — The Central Paper Co., Muskegon, Mich., has brought Leo Roen here from Detroit as its representative, with offices at 608 First National Bank building.

Higgins Succeeds Spangler

YORK, Pa.—W. G. Higgins has been appointed sales manager of the Schmidt & Ault Paper Co. to succeed Spurgeon Spangler, who has recently retired.

B. C. Logging Wage Cut-Back

VANCOUVER, B. C.—Wages in the logging industry in British Columbia will be cut back to the 1947 level which means reduction in the basic rate of 13 cents per hour to 95 cents per hour rate if lumber operators carry out their present proposals. The news of the intended cut, which will affect 30,000 woodworkers in the coastal region of British Columbia, was made at a meeting of a three-man IWA conciliation board meeting in Vancouver and held to endeavour to settle a wage dispute between the Union and 165 operators represented by Forest Industrial Relations.

The B. C. District of the IWA is demanding a 15-cent-per-hour increase, bigger contract rates, union shop, and welfare plan.

R. V. Stuart and John Billings in a brief presented on behalf of the logging operators stated, "We believe that in view of all the circumstances that the maximum wage scale the coast forest industries can undertake in the next 12 months is that of the 1947 contract, and we propose that scale for the 1949-50 master agreement."

The operators claimed in their brief that to grant the IWA demands for the 1949-50 contract would cost $22,004,256 a year. This figure is based on a normal employment of 36,000 men in the coast industry.

The IWA has demanded the union shop, but the operators reply was that they are opposed to it. "The union is asking for the establishment of a blacklist for men who don't belong to the union," stated the brief.

"The serious nature of the proposal is apparent when it is realized that a rival union in this case is claiming a membership running into the thousands. Other unions undoubtedly have many members in the industry; to attempt to force these men to relinquish their present union membership and join the IWA or contribute to its support against their wishes would undoubtedly result in chaos in many operations."

The welfare plan sought by the IWA would cost, it was stated, between $5 and $8 annually, and "can only be regarded as a request for an additional wage increase put forward for a bargaining purpose."

All the IWA requests for amendment of the contract were refused. The employers suggested, as they have done in previous years, that the union put up a "good faith" bond of $50 a member for each member of their locals, while the operator would put up a similar sum in the industry. This bond, which would amount to approximately $1,000,000 and $1,500,000 for the operators, would be used to assess damages against a "guilty party" if either, in the eyes of an arbitration board, broke the master contract.

The brief said that out of the 165 companies involved, 39 are wholly or partially closed down because of "they cannot meet operating costs."

Paper Product Pointers FROM CYANAMID

Re: Wider Markets for Paper...

PAREZ* RESIN 607 gives Paper Dependable Wet-Strength...Multiplies its Potential Uses

Paper is now going into many fields in which only cloth, metals and other sturdy and very expensive materials formerly could serve. An important reason for this is the remarkable advances in developing wet-strength paper – specifically, in Cyanamid's PAREZ RESIN 607, the melamine resin which assures *dependable* wet strength in paper.

The use of PAREZ Resin in paper has served to expand the market for paper products so as to include such diverse fields as: food pre-packaging, crate and barrel liners, maps and blueprints, frozen and non-frozen food wraps, tea bags, twisting papers, asphalt laminated waterproof papers, toweling, ice bags, laundry tags, filter papers, decalcomanias – and countless other markets, many of which could never be served by paper were it not for its new, wet-strength properties.

Cyanamid invites the paper manufacturer who would like to improve his paper and extend the market for its uses to investigate PAREZ Resin 607 and others in our wide range of superior paper chemicals. Just call in your Cyanamid representative, or write for full information.

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One of hundreds of uses of wet-strength paper: outgoing lunches, including hot foods and liquids, are packed in sturdy wet-strength bags for dependable protection.

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Seeking Flooding Damages

LOWVILLE, Mass.—Flashboards on the Gould Paper Co. dam at Lyons Falls are alleged in a $50,000 suit filed by the Johnson Pulp Co., Port Leyden against the Gould firm to be pushing the waters of the Black River back upstream a mile and one-half thereby flooding the Johnston power dam property.

Hammer Addresses Graduates

OSWEGO, N.Y.—M. Lawrence Hammer, personnel manager of the Diamond Match Co., speaking at the graduation dance held by the Rochester Business Institute, Oswego Branch, at Hotel Pontiac, on August 18, named ability, initiative and personality as the three biggest essentials in business.

FORESTRY

APPA Forestry Comm. Meet

September 28-29

NEW YORK — Recognizing the progress made through state, federal and private industry cooperation in the State of Wisconsin with respect to the growing of trees, in particular, and conservation of natural resources, in general, the Forestry Committee of the American Paper & Pulp Ass'n. will hold a meeting in Wisconsin on September 28 and 29 which executives of the pulp and paper industry are urged to attend.

Purpose of the meeting, which will consist of a one-day tour and one day of discussion, will be to demonstrate what is being done in one state by industry, with state and federal cooperation, to assure this industry an adequate future supply of wood.

The tour will start at 9:30 a.m., on September 28, at Tomahawk, Wis. Persons from out of the state can reach Tomahawk via the C & NWRR, arriving there from Chicago at 9:30 a.m. "Transportation on the tour will be provided, if you will let us know you are coming," E. W. Tinker, eecutive secretary of APPA, states.

The Tour—September 28

Stop 1. As an example of state cooperation, the State Fire Suppression headquarters will be inspected. This is one of the most modern and efficient in the country.

Stop 2. As an example of private industry initiative, the group will next see several thousand acres of plantations of various age classes on lands of the National Container Corporation, located north of Tomahawk. These plantations were started in the 1920's and some of the earlier ones are being thinned now and the thinnings used for pulpwood. (This plantation is typical of many private and public plantations in the state that total thousands of acres.)

Stop 3. A mechanical planting demonstration will be staged by the Nekoosa - Edwards Paper Company on land adjacent to the plantations seen at Stop 2.

Stop 4. Picnic lunch—A.P.P.A. and "Trees for Tomorrow" cooperating.

Stop 5. The tour will circle the state nursery at Trout Lake. From this nursery state land owners can purchase various kinds of trees for planting purposes. Some of the companies operate their own nurseries because of the extent of their plantings each year.

Stop 6. The state's Star Lake Plantation—one of the oldest in the state. Pulpwood has been harvested and sold from this plantation and accurate records have been maintained.

Stop 7. Jack Pine plantings maintained by county government.

Stop 8. An example of federal and industry cooperation will be seen at this stop. The "Trees for Toworrow" educational camp, built and owned by the U.S. Forest Service but operated by the "Trees for Tomorrow" organization, which is made up of pulp and paper mill owners in Wisconsin.

The Meeting—September 29

Stop 9. Northernaire Hotel, Three Lakes, Wis.

The meeting at the Northernaire Hotel on September 29 will be devoted to discussion of the forestry projects in Wisconsin, led by such men as C. J. Smith, chairman of the State Conservation Commission; Jay Price, regional forester, U.S. Forest Service; D. C. Everest, president of Marathon Corp.; Norman Stone, vice-president of Mosinee Paper Mills; Charles Sage, vice-president of Kimberly - Clark Corp.; Folke Becker, president of Rhinelander Paper Co.; John Alexander, president of Nekoosa-Edwards Paper Co.; Stanton Mead, vice-president of Consolidated Water Power & Paper Co.; C. J. McLaren, vice - president of National Container Corp.; and E. W. Tinker.

The Forestry Committee of the Association, headed by Walter Damtoft of the Champion Paper & Fibre Co., is desirous of having executives of pulp and paper mills, both within and without the state, attend.

Cars or busses will be provided for the tour. Those planning to drive to Tomahawk and willing to share their cars are invited to inform Mr. Tinker as soon as possible.

Studying Timber Transactions

DULUTH, Minn. — The St. Louis County board began studying a list supplied by the U.S. Forest Service of recent timber transactions in the Superior National forest during a session August 9.

The list details sums paid the Izaak Walton League in timber dealings involving the U.S., the League, and private timber operators. Samples of data and forms used in forest service timber sales also were supplied by the board.

Appearing before the board at its request, Galen W. Pike, Duluth, forest supervisor, explained that the Izaak Waltons never actually saw the timber they acquired through exchanges of property with the U.S.; that they were simply sent a U.S. check after the timber was sold. Mineral rights are not held by the League, he contended.

Sixth district Commissioner, Richard C. Floyd (Eveleth) and First district Commissioner, Edward McKeever, (Duluth), argued at length during the sessions as to whether logging in the area should be conducted. Mr. Floyd argued against logging while the Duluthian took the opposite view.

The board, after hearing George Amidon, forest management official of the Minnesota & Ontario Paper Co., International Falls, set a hearing for September 6, on the concern's application to place 7,511 acres in the Lake Kabetogama area under auxiliary forest status.

County land Commissioner, L. R. Beatty, Duluth, has recommended disapproval of the application and received support from Mr. McKeever and Seventh District Commissioner, Roy Enge, Hibbing.

Forest Service Names Denham

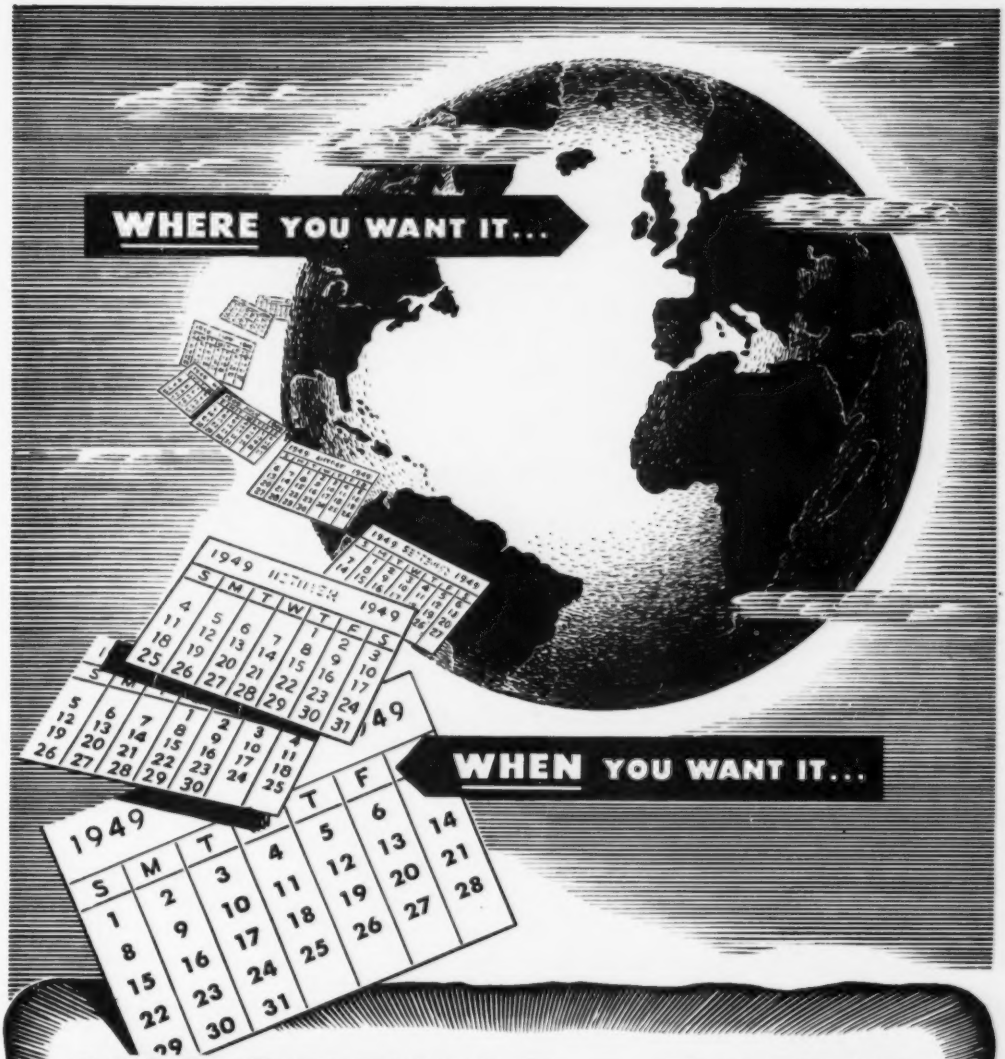
WASHINGTON — Avon Denham, who entered the U. S. Department of Agriculture's Forest Service in Colorado in 1928, has been named Assistant Chief of the Division of Range Management in Washington, D. C. Mr. Denham has been in the Division of Range Management in the California Region of the Forest Service since 1944. His new assignment, effective September 4, will involve administrative duties in the field of range management on the National Forests.

ASSOCIATIONS

Wallboard from Waste

CAMBRIDGE, Mass. — The program of the Conference on Wallboard from Waste, sponsored by the Northeastern Wood Utilization Council at Harvard University's Baker Library in the Graduate School of Business Administration, September 16, is as follows:

Wood Waste Supply in New England, Edward S. Sowinski, in charge of field survey; *Demand for Wallboard from Dealers' Standpoint,* Joshua A. Nicherson, Orleans, Mass.; *Pulp Preparation for Wallboard Manufacture,* A. J. A. Asplund, AB Defibrator, Sweden; *"Xilon" — A Semi-Chemical Process for Wallboard,* Paulo Marpillero, Azienda Brevetti Industriali, Italy; *The Manufacture of "Interwood" Wallboards,* Oswald Wyss, Interwood A. G., Switzerland; *Wallboards Made by the Swedish Cellulose Co.,* Gosta Genberg, Svenska Cellulosa AB, Sweden; *"Durisol" Lightweight Construction Materials,* John D. Dale, Durisol, Inc., New York; *Production of Hardboards from Wood Waste Without Resin Binders,* Donald F. Othmer and Louis Ricciardi, Brooklyn, N. Y.; and *Wood Waste Boards Using*



WOODPULP & PAPER

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OFFICES: Gothenberg, London, Sao Paulo, Rio de Janeiro, Buenos Aires, Mexico City, Johannesburg, Capetown, Bombay, Shanghai, Hong Kong. Representatives in all key cities throughout the world.

Resins, T. W. Sears, Monsanto Chemical Co., Springfield, Mass.

Symposium on Resin Bonded Wallboards: (a) Resin Bonded Wood Waste Panels, Thomas H. Vaughan, Hampton, S. C.; *(b) Phenolic Bonded Board,* J. Walter Cobb, Jr., Cobbwood, Inc., Hope, Ark.; *(c) Development of Plaswood Products,* Robert A. Caughey, Souhegan Mills, Wilton, N. H.; *(d) Continuous Manufacture of Resin Bonded Wallboard,* Major Keith Trevor, British Artificial Resin Co., Ltd., England; *(e) Production of "Novopan" Board,* Fred Fahrni, Switzerland, and Warren C. Smith, Wonderwood Corp., California.

Equipment for Wallboard Manufacture, H. D. Thweatt, Lake Erie Engineering Corp., Buffalo, N. Y.

Concluding Remarks and Summary, Robert S. Aries, Northeastern Wood Utilization Council.

NAWMD Organizational Revisions

NEW YORK—Organization of two new area divisions, the Atlantic and the New England, and the re-organization of a third, the Southwest, by the National Ass'n., of Waste Material Dealers, Inc., has been announced by James T. Flannery, president.

Ted Gruen, of the International Minerals & Metals Corp., of New York City, and Bert Maxman, of S. Maxman, of Philadelphia, are co-chairmen of the Atlantic division, which includes New York, New Jersey, Eastern Pennsylvania (Harrisburg and east thereof), Delaware, Maryland and the District of Columbia.

Co-chairmen of the New England division are Robert Feinburg, of David Feinburg Co., Medford, Mass., and Harry R. Woodward, of Train Smith Co., Chelsea, Mass. Maine, Vermont, New Hampshire, Massachusetts, Rhode Island and Connecticut comprise the territory for this division.

David Charak, of the Federal Paper Stock Co., St. Louis, who has been chairman of the Southwest Division, has been named honorary chairman of this unit. New co-chairmen are Mr. Charak's son, Jean B. Charak, and Bernard Schaenen, of the Commercial Metals Co., Dallas, for the area which includes Texas, Oklahoma, Missouri, Arkansas and Kansas.

Papermakers and Converters Ass'n.

NEW YORK.—A symposium on Paper and Paper Board Finishes has been selected as the subject for the first of a series of dinner meetings to be held in Cleveland on the first Friday of each month during the coming winter, L. K Burnett, quality control manager of the Ohio Boxboard Co., Rittman, Ohio, reports to *Paper Trade Journal.*

The meetings will be sponsored by a group of TAPPI members and friends who have tentatively chosen the name "Lake Erie Papermakers' and Converters' Ass'n." Anyone interested in paper or paperboard manufacture or conversion will be welcome.

The first meeting will be held at the Hickory Grill, 929 Chester Avenue, Cleveland, Ohio, on October 7. Cocktails will be available from 6 to 7, dinner will be served at 7:15, and the meeting will start promptly at 8:15. Cost of the dinner including tip will be $2.75.

Speakers for the first meeting will include representatives of a machine builder, a paper or board mill, and an ink supplier. A question-and-discussion period will be held following the presentation of papers. Paper testing has been selected as the subject for the November meeting.

Anyone interested in papermaking or converting will be welcome to the first meeting to be held at the Hickory Grill on October 7. Further information can be obtained from Bill Manor, Consolidated Paper Co., Monroe, Mich., Pete Spring, Chase Bag Co., Chagrin Falls, Ohio, Bill Schoenberg, 1200 West 9th street, Cleveland 13, Ohio, or Mr. Burnett.

National Letter Writing Week

WASHINGTON—Twenty-five thousand postmasters have been directed by Jesse M. Donaldson, postmaster general, to cooperate in the promotion of National Letter Writing Week, which will be observed for the twelfth consecutive year October 16-22.

Mr. Donaldson suggested that the postmasters seek the aid of radio stations and newspapers and expressed the hope that "merchants will cooperate by promoting the campaign in their advertisements and window displays."

A window display contest offering $660 for the best windows of boxed writing paper is being sponsored by the Paper Stationery & Tablet Mfr's. Ass'n., 527 Fifth avenue, New York City.

Leaflets entitled "Here Comes Uncle Sam," will be given to post office patrons during the week and 105,000 posters have been distributed to the retail trade by sponsoring members of the Association. In addition, the U. S. Post Office Department has made available to the nation's 33,000 rural mail carriers streamers which are to be affixed to their mail-carrying automobiles and about 67,000 special posters will be displayed in post offices.

In a concurrent effort to promote the use of air mail to transport personal letters, the major air lines, through their Air Transport Ass'n., will display another 5,000 posters.

National Safety Congress-Exposition

CHICAGO—Talks by important business leaders in some of America's largest companies will highlight the program of this year's National Safety Congress and Exposition, to be held here October 24-28.

Sessions on industrial safety will be held at the Stevens, Congress and Morrison hotels. Commercial vehicle activities will be centered in the Palmer House. The women's activities luncheon will be held in the La Salle hotel.

The Pulp and Paper Section is to have its headquarters at the Stevens Hotel. A room has been reserved where delegates may meet between sessions and after sessions. A member of the Executive Committee will be in attendance to to give whatever assistance he can. There will be displays of devices used in various plants—pictures, safety devices, details of safety contests that have been successfully used in pulp and paper mills, and copies of plant safety rules. Charles Dougherty, Box 570, Savannah, Ga., will greatly appreciate members writing to him at once and telling him about devices that can be furnished for this display. "Enclose with letter a copy of your plant safety rules, for the safety rule display. Write today!", he asks.

Goodridge and Styles to NPTA

NEW YORK — John E. (Ned) Goodridge and Stanley O. Styles have been named assistant secretaries of the National Paper Trade Ass'n. Mr. Goodridge joined NPTA on August 15 and Mr. Styles will be on the job in September.

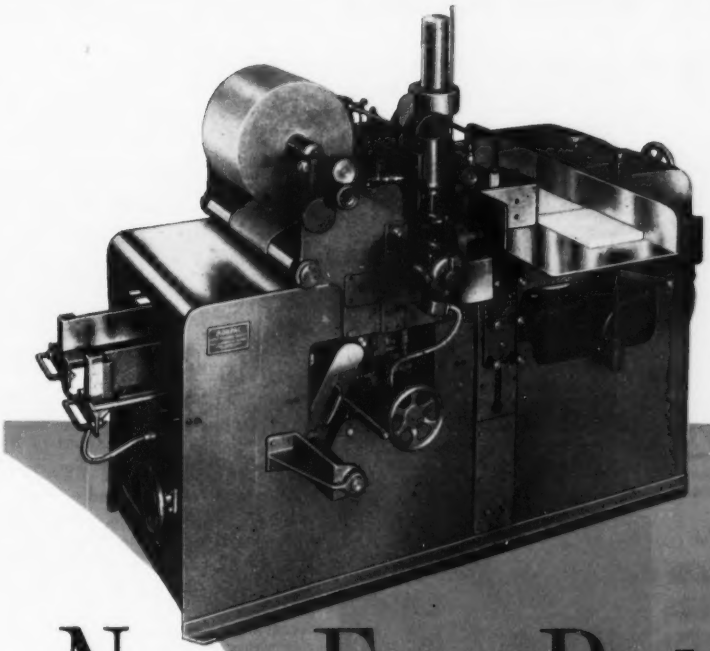
Mr. Goodridge, until recently with the Paper Division of the Continental Can Co., where he was product sales manager in charge of composite (fibre board and metal) containers, including those used for frozen food, will concentrate primarily on wrapping paper problems.

Mr. Styles will concentrate primarily on the fine paper field. For many years Mr. Styles represented the Martin Cantine Co. and more recently the Hollingsworth & Vose Co. in greater New York. He is a past president of the Paper Club of New York and of the Salesmen's Ass'n. of the Paper Industry.

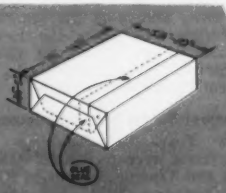
While thus strengthening capacity for field work and contact with members, NPTA has felt obliged to eliminate the consultation feature of its engineering service but remains in a position to answer general questions relating to this field by mail, W. G. Leathers, executive secretary, reports.

Personnel Executives Conference

NEW YORK—Paper men and individuals associated with firms serving the paper industry are prominent among personnel executives steering the coming meeting of the Personnel Executives branch of the American Management Ass'n., which will gather at the Waldorf-Astoria hotel, September 26-28. Among them are: Alexander Heron of the Crown Zellerbach Corp., San Francisco; Harry W. Anderson, vice-president, General Motors Corp., Detroit; Samuel L. H. Burk, director of industrial relations, Pittsburgh Plate Glass Co., Pittsburgh; E. M. Cushing, director of industrial relations, U. S. Rubber Co., New York; Frank Evans, director of service department, E. I. du Pont de Nemours, Inc., Wilmington, Del.; C. L. Huston, Jr., executive assistant to the president, Lukens Steel Co., Coatesville, Pa.; J. Ward Keener,



Dimensions below indicate the size range of Lynch MORPAC. All packages have the same neat appearance—square corners, trim edges and folds, properly sealed.



Neater, Faster Packaging

...with the LYNCH MORPAC PAPER PACKAGING MACHINE

Why wrap it by hand when Lynch MORPAC can wrap it faster, neater... and pay for itself quickly on any normal operation. Designed primarily for the graphic arts, Lynch MORPAC Paper Packaging Machine wraps or bands ream paper, tablets, pads, loose leaf fillers, books and most rectangular objects within its size range. Requiring only one operator, it wraps up to 1,000 packages per hour, saves from 30% to 40% per package on wrapper application.

Write for illustrated folder giving more details on how Lynch MORPAC Paper Packaging Machine helps reduce packaging costs.

PAR AIR COMPRESSORS

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MORPAC BUTTER & OLEO PACKAGING MACHINES

MORPAC PAPER PACKAGING MACHINES

GLASS FORMING MACHINES

vice-president, B. F. Goodrich Co., Akron, Ohio; Ralph W. Monk, director of industrial and labor relations, Caterpillar Tractor Co., Peoria, Ill.; W. H. Winans, industrial relations manager, Union Carbide & Carbon Corp., New York, and others.

West Coast Safety Seminar

FOREST GROVE, Ore.—Seven representatives from the Pacific Coast Pulp and Paper Industry participated in the Centennial Graduate Seminar held at Pacific University, under the joint sponsorship of the university and the Portland Chapter of the American Society of Safety Engineers. Theme of the seminar, which incidentally marked the 100th anniversary of the university, was "Human Factors in Safety." Enrollment was limited to 25 people engaged in accident prevention work.

O. R. Hartwig, general safety supervisor, Crown Zellerbach Corp., Portland, Ore., addressed the seminar on the subject "The Working Environment and Safety," and R. M. Gilmore, Rayonier Inc., Hoquiam, Wash., led a Problem Forum discussion.

Equipment Safety Schools Successful

NEW YORK—The American Pulpwood Ass'n. recently held a series of Truck and Tractor Schools in Preventive Maintenance and Safety in New England for the pulpwood producing industry. In Maine, state police assisted in an on-the-highway safety program, followed by on-the-job safety taught by company safety engineers. Tractor, truck, and tire manufacturer representatives showed safe and economical equipment.

Three Join Nat. Safety Council

CHICAGO — These three companies have become members of the Pulp and Paper Section of the National Safety Council:

Stone Container Corp., Joseph Noble, plant superintendent, Chicago; Holmens Bruks Och Fabriks, Aktiebolag, Skyddkontoret, Norrkoping, Sweden; and American Pulpwood Ass'n., H. H. Jefferson, New York.

N. W. Supt's, Duluth Meet

CHICAGO.—F. X. Kreiling, chairman of the Northwestern Division of the American Pulp & Paper Mill Superintendents Ass'n., Inc., reports that the 1949 Fall Meeting of the Division will be held at Hotel Duluth, Duluth, Minn., October 4-5.

MERCHANTS

Morrow Joins Wilson Paper Co.

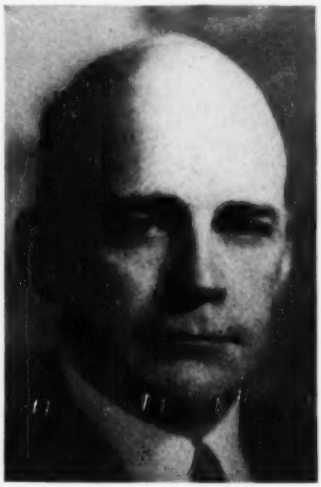
GALESBURG, Ill. — W. L. Morrow is now manager of the Wilson Paper Co. of this city. Previously he was a division sales manager of the American Paper Goods Co., Chicago.

Johnson Succeeds Taylor at Ft. Wayne

FORT WAYNE, Ind.—Wesley R. Johnson has been named successor to Roscoe Taylor as general manager of the local Butler Paper Co. branch.

World Wants American Goods

NEW YORK — George G. Cobean, president of the Bulkley, Dunton Paper Co., S.A., has returned from an eight-month trip started last December, flying across the Pacific to Japan, China, the Philippines, Indo-China, and countries in Southeast Asia, during which the sales organization of the company's Far Eastern subsidiary, Bulkley, Dunton Paper (Far East) Co., Inc., of Manila, was expanded in all markets visited. Mr. Cobean spent two months at the end of his trip in Europe visiting Greece, Italy, Switzerland, Germany, France, England, Scotland, Denmark, and Sweden.



GEORGE G. COBEAN

He reports definite signs of improvement and apparent beneficial effects of our European Recovery Administration, particularly in Italy and France. Italy has made a marked recovery since the war, with the people working, apparently happy, and living about as normal, he found.

Food everywhere in Europe is improved compared to that which he found when he was last there two and a half years ago. Even in England, the food is better and somewhat more plentiful, although still inferior to that elsewhere in Europe, even in the Western Zone of Germany. Mr. Cobean reports British papermakers busy, although still laboring under too much unwise government control.

The outstanding impression Mr. Cobean reports having received everywhere he traveled is that all countries are clamoring for American goods, including paper, but because of dollar scarcity are compelled to buy elsewhere, even to their disadvantage. "If the United States expects to maintain its foreign trade, which furnishes the extra ten percent of volume of business required for the profitable operation of its industries, we must in every way possible increase our imports from abroad so that dollars may be made available for payment of our finished products. We are still doing too much insular thinking in this country, and must raise our sights if we are to maintain prosperity in our industries," he said.

Political conditions in the Far East are in turmoil in many places, much of which is the aftermath of poison instilled by the Japanese in the minds of the natives to the effect that the white man's sun in the Orient is setting. Indonesia and Malaya are good examples in question. Mr. Cobean firmly believes that we are doing a great injustice to the people of Indonesia, as well as to the Dutch, by so stubbornly supporting the so-called Indonesian Nationalist government under Soekarno, who was a Japanese puppet and does not have the support of more than a small, but very vociferous part of the Indonesian population.

Foulds and Lewis Advanced

ROCHESTER, N.Y.—The Alling & Cory Co. has appointed Hamilton J. Foulds vice-president and manager of the Cleveland Division, and Howard F. Lewis as sales manager. The appointments were made following the recent death of James E. Alcorn, who was manager of the Cleveland Division since it was established 22 years ago.

Mr. Foulds, who has been with Alling & Cory Co. for 34 years, leaves his position as manager of sales at Rochester to go to Cleveland. Mr. Lewis has been the Youngstown sales representative of the Cleveland Division. His association with the firm extends over a period of 18 years, Richard M. Harris, president, reports.

Staib, Jr., to Wilmington Co.

WILMINGTON, Del. — Charles R. Staib, Jr., of Bellemoor, has been named vice-president of the Wilmington Paper & Twine Co. in charge of industrial sales and distribution. Mr. Staib, formerly with the Delaware Hardware Co., assumed his new position this week. He is a member of the Delaware State Highway Department.

CONVERTERS

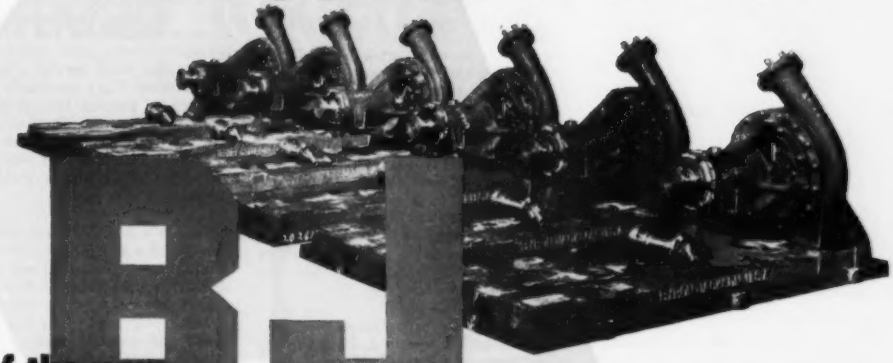
Set-Up Box Plant for Lowell, Mass.

LOWELL, Mass.—Heppe Hudson Co. will open a plant at Broadway and Dutton streets, 80,000 square feet in area, to manufacture set-up boxes. Sam Gordon will be in charge. The firm now has plants in Pennsylvania, in Ozone Park, L. I., and Brooklyn, N. Y., and in New Haven, Conn.

Gair Wins Honorable Mention

NEW YORK — The Robert Gair Co. has been awarded honorable mention by the Folding Paper Box Ass'n. of America for the Cloverbloom egg safety carton it produced for Armour & Co., Chicago.

heavy pulp moves *fast!*



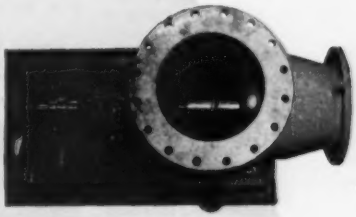
BJ

Six of the new

Pulp Pumps

—— in series with the new BJ screw feeder pump, handle 8 to 10% Stock with ease

8 TO 10% STOCK IS HEAVY! But not too heavy for the pumping set-up engineered by BJ for a large Mid-Western pulp mill. Six 100 hp, 6″ x 12″ BJ *Special Duty* Pulp Pumps operate in a series. The suction of the first pump is fed by a 16″, 15 hp BJ Screw Feeder Pump. No suction line trouble, no clogging. Flow is smooth and positive. (These *Special Duty* Pulp Pumps are identical in design to the new *standard line* of BJ Pulp Pumps, except for impeller size.)



Top view of BJ Screw Feeder Pump

THE NEW BJ PULP PUMPS can be converted to acid and liquor service (or back to pulp stock service) merely by changing a few pump parts. For hot service, the standard stuffingbox can be replaced with water-jacketed stuffingbox. Entire bracket, rotating element and pump cover can be unbolted and lifted free from case without disturbing suction and discharge piping. Impeller clearance adjustable without dismantling. *Standard Pump Capacities to 4000 gpm. Heads to 200 ft. Sizes to 10″.*

BJ PULP PUMPS
STOCK CONSISTENCY RANGE

	Standard Pumps	Special-duty Pumps
Normal Range	Up to 6%	
Range with Screw Feeder Pump in Series	6% to 8%	8% to 10%

Byron Jackson Co.

Established 1872

LOS ANGELES 54, CALIFORNIA

Offices in Principal Cities

Container Leases Bemis-Jason

CHICAGO—Container Corporation of America report that its wholly-owned subsidiary, the California Container Corp., has leased the folding carton machinery and equipment of the Bemis-Jason Co., San Francisco. Bemis-Jason will continue to manufacture its line of corrugated specialties at its present location.

New Building for Old Colony

RADFORD, N. C.—A. A. Nolan, president-treasurer of the Old Colony Box Co., discloses that construction of a $75,000 plant at First and Robertson streets will get under way immediately. The new quarters are expected to be ready for occupancy before the end of the year.

Stocker Burned in Boat Blast

LAKE HOPATCONG, N. J. — Fred Stocker, president of the Stocker Mfg. Co., who was seriously burned in an explosion and fire that destroyed his motorboat on August 7, is now home and recovering from his injuries.

Oneida's Stein Succeeds Gale

CLIFTON, N. J.—Oneida Paper Products Inc., has named Sidney A. Stein as manager of its Southern Division factory and sales office in Fort Worth, Texas, succeeding Sol R. Gale.

Peel Off Palette Incorporated

NEW YORK — Peel Off Palette, Inc., paper products, has been incorporated by Max Greenberger, 276 Fifth avenue, with 200 shares of npv stock.

Hamilton, Appleford P. A.

HAMILTON, Ont.— John Corbett has been appointed purchasing agent of Appleford Paper Products, Ltd.

SUPPLIERS

Crawford H. Greenewalt, president of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., on August 18 sent the following letter to du Pont suppliers, accompanied by a copy of a letter he sent to his firm's stockholders on July 11:

"You may have heard or read that the Department of Justice has filed an anti-trust suit against the du Pont Co., General Motors Corp., U. S. Rubber Co., two holding companies and more than 100 members of the du Pont family.

"It is my belief that while this suit may directly involve only the du Pont Co. and individuals listed above, the philosophy behind it is such that it affects the entire business community. Certainly the government's belief that bigness in business is bad, and should be eliminated, is a matter of concern to all business, small as well as large.

"You, for example, are one of 30,000 firms from whom du Pont purchases materials. An estimated 92 percent of these are small firms, employing less than 500 people. Many of these smaller companies are just as dependent upon big business—both as a source of supply and as a market—as the larger units are upon the small. The relationship is, therefore, not one of antagonism, but of mutual advantage.

"With this in mind, I am taking the liberty of sending you a copy of a statement I recently made to du Pont's 100,000 stockholders about the suit. It is my hope that you will find it of interest."

John A. DeGroot, formerly of Pittsburgh, has been transferred to the San Francisco office of the Westinghouse Electric Corp. as assistant to the Pacific Coast District manager, succeeding *W. J. Howell* of Burlingame, who has been appointed assistant to the corporation's apparatus sales manager at Pittsburgh.

Automatic Transportation Co., Chicago, has added Joseph J. Powle to the sales force in its newly formed New York factory branch sales office at 347 Madison avenue. Mr. Powle comes to Automatic from the F. H. Trethewey Co., Charlotte, N. C. He will cover the counties of Queens, Nassau, Suffolk, Westchester, Rockland, and The Bronx.

Donald J. Kesterke of the Dilts Machine Co., Fulton, N. Y., is the principal owner and president of the Oswego Broadcasting Co., the corporate name of WOSC, Fulton's new standard (AM) station. He is also head of the D-K Products Co.

United States Rubber Co., New York, has added round endless belts to its U.S. Rainbow line for use on small machinery applications. The belts are of round cross-section design, built without a splice, to help eliminate vibration. Cord pulling members keep stretch at a minimum. Bias cut jackets protect the inner structure and insure flexibility. Endless round belts are recommended for quarter-turn, mule, serpentine, cross drives, and other special wheel turning applications. They can easily be shifted on step-up pulleys for speed changes, the company said. The belts are available in sizes ranging from 3/16-inch to ½-inch belt diameter and from 6⅞-inches to 156⅜ inches inside circumference.

Borden Co.'s Chemical Division has introduced a special urea formaldehyde resin which gives added wet and tensile strength plus increased folding endurance to paper used in making towels and shipping bags. The resin comes in liquid and powder form. The liquid resin is being marketed as Casco Resin PR-145 and the powder as Cascamite PR. Shipment of the liquid type is in 55-gallon drums, but plans are underway to ship by tank car. The special resin has special advantages according to Borden officials. Free-flowing and easy to mix, it can be added to the paper stock in the beater, before the stock is formed on the paper machine. Its slow-curing properties enable mills to rework "machine broke" paper and thus cut down waste, it is stated.

George E. Gilliam will manage pyrometer supplies sales nationally for the Brown Instruments division of the Minneapolis-Honeywell Regulator Co. Mr. Gilliam has been with the company for the past five years, most recently at its South Bend branch office. He will make his headquarters at the company home office in Philadelphia.

Mutual Boiler Insurance Co., Boston, has opened two new resident inspection offices: one at Box 87, Amawalk, N.Y., with inspections under the direction of W. G. Rance, resident inspector; and the other at 10342 Santa Monica boulevard, Los Angeles, under the direction of A. J. Gray, resident inspector.

Martin R. King has been appointed manager of the General Electric apparatus department news bureau, Schenectady, N.Y., succeeding C. P. Fischer, Jr., who has been named manager of a new promotional division, activities of which will be announced later.

B. C. Ames Co., Waltham, Mass., manufacturer of micrometer dial indicators and micrometer dial gauges, has named the E. L. Sandberg Co., 930 Pillsbury building, Minneapolis, exclusive sales representative in Minnesota and western Wisconsin.

Gould Storage Battery Corp., Trenton, N.J., will conduct a five-day school on the care, maintenance, and charging of the storage battery, November 14-18.

NEW DILTS MEN

R. J. Jacobs (right) and L. E. DeWeese (left) have recently become field representatives for the Dilts Division of the Black-Clawson Co. to handle Dilts converting equipment and Kohler paper-winding equipment respectively. . . Mr. Jacobs previously served in engineering capacities with the Goodyear Aircraft Corp., Akron, Ohio, and the Mercury Engineering Corp., Milwaukee, including two years of independent consultation service in Madison, Wis. . . Mr. DeWeese was vice-president and a director of the Kohler System Co., at the time of the purchase of that company by Black-Clawson. Before that he was associated with the Geo. H. Mead Co., Dayton, Ohio, for 14 years, being western representative of that company for a considerable period, with headquarters in Chicago.

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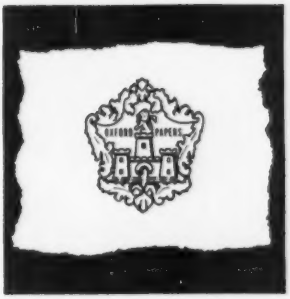

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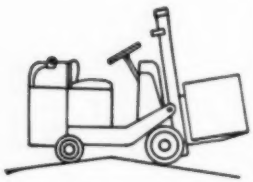

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Comparison of Methods for Determination of Sulphide in Oxidized Sulphate Black Liquor

By

T. T. COLLINS, JR.

Thilmany Pulp and Paper Co., Kaukauna, Wisconsin

In our work on the oxidation of sulphate black liquor it has been necessary to make a study of the various methods generally used at present for determining the sodium sulphide in black liquor samples. Surprisingly enough, some of the methods studied do not require much time if proper equipment is available while other methods are not only time consuming but do not give an accurate picture of the sulphide content of partially or completely oxidized liquors.

As a qualitative test for determining whether or not a black liquor sample contains any residual sulphide sulphur, the method suggested by Bergstroem and Trobeck (1) is of value.

Qualitative Test

Place 10 ml. of the liquor sample in a 200 ml. distilling flask and add 50 ml. of a 5 percent ammonium chloride solution. Boil the mixture in the flask for several minutes and bubble the gases evolved through a solution containing 10 percent cadmium chloride in 1 percent hydrochloric acid. If completely oxidized liquor is present only a white cloudy precipitate will show in the cadmium chloride solution and this will redissolve on stirring. The presence of unoxidized sulphide in the liquor will be indicated by a yellow precipitate or coloration in the cadmium chloride solution.

The choice of a quantitative method for the determination of the sulphide sulphur in samples of ordinary black liquor and partially or completely oxidized liquor samples could not be made until the various methods in the literature could be compared and some of the variations in the analyses considered.

Modified TAPPI Method (2)

The rubber stopper of a 250 ml. distilling flask is fitted with two glass tubes, one of them drawn to a point so that carbon dioxide can be bubbled into a sample in the flask and the other one arranged so that carbon dioxide can be passed in to sweep the air out of the flask. The stopper is also equipped with a funnel with a stopcock on it so that acid can be added to the sample without releasing any of the gasses in the flask. The distilling flask outlet is connected to a condenser which is connected with three bubbler-equipped absorption bottles filled with a diluted standardized iodine solution (usually 0.1-N iodine stabilized with 125 grams of potassium iodine per liter of iodine solution) followed by a similar bottle containing a standard sodium thiosulphate solution to trap any iodine carried over.

A 10 ml. sample of black liquor is placed in the flask. Carbon dioxide is passed into the flask through the tube which is not submerged in the liquor and bubbled through the absorption bottles for a few minutes to sweep the air out of the system. If this carbon dioxide were bubbled into the liquor, some hydrogen sulphide would be released in the presence of air in the flask and the liquor would also foam over into the absorption bottles. The carbon dioxide stream is then discontinued and a sufficient quantity (previously determined) of dilute hydrochloric acid to neutralize the liquor to pH 4.0 is run into the sample. Then 100 ml. of water are used to rinse the acid into the flask. As an alternative procedure, adjustment of the pH of the sample to 4.0 can be eliminated by adding 100 ml. of a 5 percent ammonium chloride solution to evolve the hydrogen sulphide. The distilling flask is then set in a bath of boiling water for thirty minutes. During this time, carbon dioxide is bubbled through the sample to carry the sulphur gases evolved over into the absorption bottles. At the end of the run, the condenser is rinsed into the trap bottles and the amount of iodine consumed by the sulphur gases released from the sample is calculated to its sodium sulphide equivalent. As will be shown later, pretreatment of the black liquor with barium chloride and settling it before taking a sample of the supernatant liquid was found to have an appreciable effect on the results, but this step was eliminated from the TAPPI procedure. A sufficient number of iodine-filled absorption bottles (usually three) should be used to absorb all the hydrogen sulphide.

Modification of Bergstroem and Trobeck (B-T) Method (1)

The same general equipment is used for this method as for the modified TAPPI procedure. An extended train of absorption bottles is filled with 10 percent cadmium chloride solution in 1 percent hydrochloric acid solution and is followed by a single absorption bottle filled with iodine solution and finally by a sodium thiosulphate solution-filled trap bottle. The sulphur gases are evolved by the hydrochloric acid procedure as used in the previously described modification of the TAPPI method. At the end of the evolution of sulphur gases, excess standard iodine solution and acetic acid were added to the cadmium chloride solution in each flask and the iodine consumed was determined by titration of the remainder with sodium thiosulphate solution.

Moltzau Method (3)

This procedure is based on the work of Moltzau (4) who pointed out that sodium sulphide in the presence of formaldehyde is completely, rather than half, neutralized at a pH of 8.3. The original procedure (3) consisted of taking a portion of the barium chloride-treated liquor sample prepared for sulphide determination by TAPPI 625 and making a potentiometric titration of it using a glass electrode and standard acid to a pH of 8.3 and repeating the titration on a similar sample to which formaldehyde had been added. The black liquor sample (20 ml.) is added to approximately 200 ml. of distilled water containing 5 ml. of C.P. formalin. Since no particular advantage could be seen for the barium chloride treatment of the sample, this step is eliminated from the sulphide determination in our work and the reasons will be discussed later. The difference between the titration in the presence of formalin and the original sample multiplied by 2 represents the sodium sulphide equivalent in the black liquor. A blank titration to pH of 8.3 using standard sodium hydroxide solution is made on the water and formalin mixture so that its acid equivalent can be added to the acid required for titration of the sample of black liquor containing the formalin.

Borlew and Pascoe (B-P) Method (5)

This potentiometric method permits direct titration of the sodium sulphide in black liquor with silver nitrate solution. A 10 ml. sample of black liquor is added to 500 ml. of approximately normal sodium hydroxide solution plus 4 ml. of concentrated ammonium hydroxide. With adequate stirring, the solution is titrated with 0.1-N silver nitrate solution while the potential of a silver-silver sulphide electrode (Ag-

AgS, No. 1281x6 relative to a high pH glass electrode (Blue Point 4990-E) immersed in the solution is indicated by a Beckman Model H pH Meter. On this pH meter the initial voltage reading for a sample containing a moderate amount of sulphide is greater than + 400 millivolts so the standardization is adjusted to that value. Actually, the pH meter and electrodes used do not allow us to measure the correct initial voltage value of an unoxidized liquor sample of high sulphide content and the apparatus is used merely to indicate the endpoint of the titration with silver nitrate.

The titration of the sample is made and the data plotted until sufficient silver nitrate is added to start a definite downward trend in the valvanometer deflection which continues without the further addition of silver nitrate. For our purposes we have taken the endpoint as the number of ml. of silver nitrate which causes the graph to cross the + 250 millivolt line on its downward trend. When several samples of liquor are to be run, the sample having the highest sulphide content (for example the raw liquor) is run first with an initial reading set at + 400 millivolts and the standardization is not changed for subsequent samples so that all the endpoints will be based on this initial setting. The electrode tips should be occasionally wiped clean with cotton and should be stored in normal sodium hydroxide solution between analyses.

The first tests consisted of a comparison of the TAPPI and the Moltzau methods on a sample of raw black liquor and also liquor in the partially and completely oxidized forms to see the effect of barium chloride treatment of the sample in preparing it for the test. The results are given in *Table I.*

Table I

Sulphide Content of Untreated and $BaCl_2$—Treated Black Liquor Samples

	Grams of Na_2S/Liter			
	Untreated Liquor		$BaCl_2$-Treated Liquor	
Sample	TAPPI	Moltzau	TAPPI	Moltzau
1 (Raw)	7.38	6.04	7.66	5.62
1A (Partially oxidized)	3.42	0.0	3.42	0.0
1B (Completely oxidized)	2.89	0.0	3.26	0.0
2 (Raw)	..	5.26	...	..
2A (Partially oxidized)	2.85	1.75	...	...
2B (Partially oxidized)	2.53	0.0	..	...
3 (Raw)	..	...	10.68	9.75
4 (Completely oxidized)	0.39	...	...	...

Note: Sample 4 was oxidized completely and then allowed to stand for at least 8 months under air before testing.

On the basis of arguments advanced in the past, by either of these two methods the $BaCl_2$-treated liquor should have shown lower sulphide content because of oxidation that can occur in preparing the samples and a possible reaction between the sulphide and the sulphite in the liquor on standing. In the case of the Moltzau method, removal of sulphite should give a lower value since this ion is titrated with the sulphide in the presence of formaldehyde. It was the conclusion of this investigator that manipulation of the samples during barium chloride treatment might introduce almost as great an error as would result from the small quantity of residual sulphite sulphur in unoxidized black liquor.

In order to check this a sample of black liquor was analyzed by the B-P method so that there would be no interference from sulphite. The liquor analyzed 11.61 grams of sodium sulphide per liter but when the sulphite was removed from a sample according to TAPPI 625 m-44, and the titration carried out the following day, the liquor showed 10.89 grams of sodium sulphide per liter. This indicates that the sulphide content is lowered by oxidation of the sample when the sulphite is removed. Some organic constituents which react with silver nitrate also may be reduced by the sulphite removal but there is no proof for this. On the basis of later data, it is possible to see that were it not for oxidation during removal of the sulphite, the value for sulphide by the TAPPI test would be greater and for the Moltzau test lower than for a sample from which the sulphite had not been removed. In the Moltzau test, two things, removal of sulphite and oxidation, both tend to lower the sulphide value but removal of sulphite might increase the sulphide value if the former ion has been reacting with the sulphide in the titration. In the TAPPI test, oxidation tends to lower the sulphide content whereas removal of sulphite tends to give an increased value if the sulphite reacts with the sulphide in the evolution and a decreased result if the sulphite evolved has not reacted but consumes iodine along with the sulphide.

Since in the original Bergstroem and Trobeck method the collection of the cadmium sulphide precipitate is difficult, the modified procedure was studied to determine the iodine consumption of the absorbing solutions. Test data are given in *Table II.*

Table II

Iodine Consumption of Absorption Solutions in Black Liquor Analysis with Modified B-T Method

	Iodine Consumed Calculated to Na_2S in Sample (Grams/Liter)	
Absorption Bottle	Original Sample 5A	100% Oxidized Sample 5B
1. . $CdCl_2$	7.130 (Yel. ppt.)	0.297 (No color)
2. . $CdCl_2$	1.366 (Yel. ppt.)	0.000 (No color)
3. . $CdCl_2$	0.396 (Yel. color)	....
4. . $CdCl_2$	0.139 (No color)	....
5. . $CdCl_2$	0.059 (No color)	....
6. . I_2	0.772	0.297
7. . $Na_2S_2O_3$	—0.119	—0.119
Total	9.862	0.475

This data shows that some of the gases from a 100 percent oxidized liquor (by the qualitative test) given off during the sulphide evolution are absorbed in the acidified cadmium chloride solution and have an iodine demand even though no precipitate results. Evidently the gas trapped in the cadmium chloride-filled absorption bottles in which no precipitate appears is not sulphur dioxide because, as will be shown later, the sulphur dioxide released from sodium thiosulphate solution into an acidified cadmium chloride solution does not cause the cadmium chloride solution to react with iodine. The possibility exists that a slight amount of cadmium sulphide dissolved in the hydrochloric acid does not give a noticeable coloration to the solution. The gas trapped in the iodine-filled absorption bottle is probably partly sulphur dioxide. If the cadmium sulphide precipitate had been collected from the absorbing bottles and the sulphide released by acidification in the presence of excess iodine as originally done by Bergstroem and Trobeck, the value for the unoxidized sample, 5A, could have been less than 8.5 grams of sodium sulphide per liter. This figure is based on the assumption that the total iodine consumption of the first two absorption bottles is due to the cadmium sulphide precipitate which could be collected. In the case of the 100 percent oxidized liquor sample, the original B-T method would have given a zero value for Na_2S.

Determinations of sodium sulphide in black liquor using the Moltzau or B-P methods are quite rapid and simple. Practically the same equipment may be used for either procedure. It is felt that these methods are probably more suitable than the TAPPI method for determining the efficiency of our oxidation process, obviously so on a liquor sample showing no residual sodium sulphide by the qualitative test. *Table III* gives values for various samples tested by the different procedures.

This data indicates several things of interest. The Moltzau method probably gives its low results due to organic materials in the black liquor which affect the titration similarly as does the presence of formaldehyde. This was admitted by Moltzau (4) and in the discussion (3) of his method. Oxidation of the sample while it is being titrated also serves to accentuate the lowering of the sulphide value. Sulphite in the liquor when formaldehyde is present is all titrated above pH 8.3 and this would give a higher value for the sulphide content unless it reacts with the sulphide during the titration and actually reduces its value.

The evolution of sulphide at a pH of 4.0 with hydrochloric acid in the TAPPI test (as will be shown later) results in the release of sulphur dioxide from the sodium thiosulphate present and this release is undoubtedly greater than when ammonium chloride is used. Since the hydrogen sulphide and sulphur dioxide react rapidly to give free sulphur, the sulphide value is lowered when more sulphur dioxide is released. The fact that sulphite was not removed from the black liquor samples before

Table III

Sodium Sulphide Content of Black Liquor Samples as Determined by Various Methods

Analytical Method	Original Liquor	Partially Oxidized Liquor	100% Oxidized Liquor
	Na₂S Content in Grams/Liter		
Liquor from Oxidation Test Run 3			
TAPPI	6.43	3.51(45)	3.55 (45)
Moltzau	4.88	1.09(78)	0.00 (100)
B-T	5.75	...	2.58 (55)
B-T	4.94a	...	0.00a(100)
B-P	6.44	0.58(91)	0.00 (100)
Liquor from Oxidation Test Run 4			
B-P	7.60	4.13(46)	
Moltzau	6.24	2.73(56)	
Liquor from Oxidation Test Run 5			
B-P	7.60	4.87(36)	
Moltzau	6.24	3.55(43)	
	Liquor	Sample 5	
B-P	10.92	...	0.00 (100)
Moltzau	8.19	...	0.00 (100)
TAPPI	9.12	...	1.02 (89)
TAPPI*	9.79	...	0.46 (95)
B-T	9.86	...	0.48 (95)
B-T (calculated	8.50a	...	0.00a(100)
	Liquor	Sample 6	
B-P	11.00		
Moltzau	8.19		
TAPPI	9.86		
TAPPI *	10.61		

a—Maximum value by B-T method based on iodine consumption of absorbing solutions in which precipitate is formed.

*—Sulphide evolved with NH_4Cl.

( )—Percentage oxidation.

Note: Liquor sample 6 was sampled two weeks after sample 5. Sulphite was not removed from the samples before testing.

running the tests may account for the fact that the B-P procedure (where sulphite does not interfere) indicates a higher sulphide content than the TAPPI method.

Characteristic titration curves determined by the B-P method for black liquor samples of various degrees of oxidation are shown in *Figure 1*. It should be noted that the initial value was set at + 400 when the voltage was above that figure and that we are merely trying to locate the inflection of the titration curve rather than the true initial voltage of the solution, because in most cases it is above the range of our pH meter. The dotted portions of the curves indicate the range in which the millivoltmeter reading drops slowly down with stirring with none or with only slight addition of silver nitrate.

When considering the typical curves shown in *Figure 1*, it should be kept in mind that the endpoint of the titration for sulphide may be at a higher millivolt reading than the + 250 arbitrarily chosen. At one time during our experiments a sample of black liquor was oxidized to have no residual sulphide sulphur as shown by the qualitative Bergstroem-Trobeck test yet the initial reading for that sample was +311. When the sample was aerated still further, the initial reading dropped to + 50 but with stirring increased to + 150. Further aeration of a sample reduced the initial reading to — 150 but this value increased to 0 with continued stirring. The pH meter had been set at + 400 mv. originally for a black liquor sample containing considerable sodium sulphide.

To carry the comparisons somewhat further, it was desirable to check a standard sodium sulphide solution by the Moltzau and B-P methods and to note the effect of prolonged stirring in the presence of air during the analysis. The results in *Table IV* were obtained on a solution made up by weighing out 12.676 grams of C.P. $Na_2S.9H_2O$, dissolving it in distilled water, and diluting it to a liter. The sulphide in the solution was also determined by adding a measured volume of it to an excess of standard iodine solution, acidifying with acetic acid and titrating the excess iodine remaining with sodium thiosulphate solution.

These results indicate that there is some oxidation of the sulphide sulphur taking place during the analysis by either the Moltzau or the B-P method. If glycerine was added to the samples which were to be stirred, the reduction in sulphide content was approximately the same as when no glycerine was present. Because of this oxidation during these analyses, this error should be held at a minimum by carrying out the analyses as rapidly as possible. It is of interest to note that a sample of black liquor standing for 24 hours at room temperature with twice as much air as liquor in the jar had the sulphide reduced from 13.85 to 12.69 grams per liter.

Borlew and Pascoe (5) have pointed out that the sulphide content of black liquor samples is not stable unless they are stored under rigid exclusion of air

Table IV

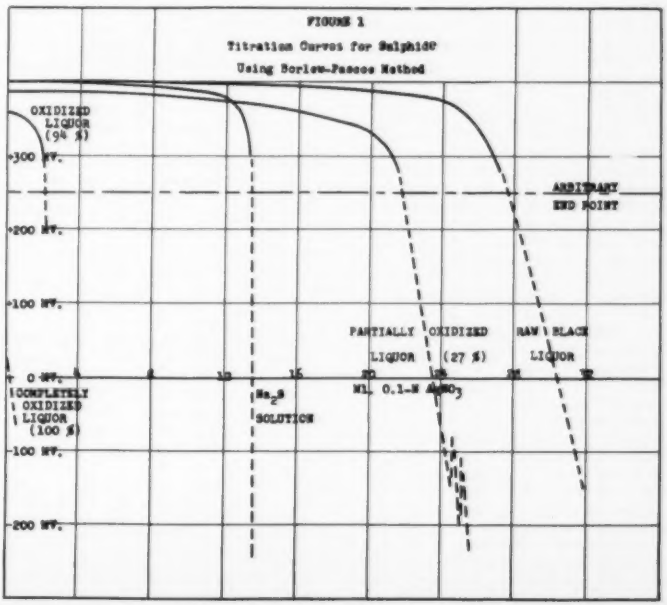
Effect of Contact of Sample With Air on Sulphide Analysis by B-P or Moltzau Methods

Sample	Method	Sodium Sulphide (Grams/Liter)
Standard Na_2S solution	Calculated	4.12
Standard Na_2S solution	Iodine	4.04
Standard Na_2S solution	B-P	3.79
Standard Na_2S solution	Moltzau	3.54
100% Oxidized Liquor plus Na_2S solution...	B-P	3.86
100% Oxidized Liquor plus Na_2S solution...	Moltzau	3.45
100% Oxidized Liquor plus Na_2S solution...	B-P, stirred 35 minutes before titrating	3.45
100% Oxidized Liquor plus Na_2S solution...	Moltzau, stirred 30 minutes before titrating	2.94

Note: Rate of voltage drop at endpoint of titration and beyond in B-P method is much less in presence of black liquor than in Na_2S solution alone for a given addition of silver nitrate.

and at low temperature. Our work has shown that storing a black liquor sample in a completely filled, clear glass container with a tight stopper for a period of a month results in no lowering of the sulphide content. The same liquor sample stored in a bottle two thirds full of air for the same time period and which was opened frequently had the sodium sulphide content reduced from 10.92 to 5.50 grams per liter by oxidation.

It was realized in connection with the TAPPI sulphide test that there may be appreciable differences if the pH of the sample is other than 4.0 upon acidi-



fication for the evolution of the hydrogen sulphide. At a pH around 4.0 the sodium thiosulphate in black liquor begins to decompose and the lower the pH, the greater the decomposition.

$$Na_2S_2O_3 \rightarrow Na_2SO_3 + S$$

$$Na_2SO_3 + 2\ HCl \rightarrow 2\ NaCl + SO_2 + H_2O$$

In order to check this, the TAPPI sulphide evolution with hydrochloric acid was run on 10 ml. samples of 0.1—N sodium thiosulphate solutions and a sulphide-free oxidized black liquor sample at various values of pH. It was assumed that the sulphur gas released from the oxidized black liquor came from the thiosulphate present. These data are shown in *Table V*.

Table V

Effect of pH on Evolution of Sulphur Gases in TAPPI Sulphide Test

Sample	Ml. 0.1-N HCl Added	pH in TAPPI Test Before	pH in TAPPI Test After	Ml. 0.1-N Iodine Consumed by Evolved Gases	Decomposition of Thiosulphate Present (%)
		Sulphide-free Black Liquor			
a	0.0	11.23	..	..	..
b	7.2	6.0	7.6	0.0	..
c	11.4	4.0	4.2	1.0	7
d	17.6	2.0	2.3	12.4	80
		0.1-N Sodium Thiosulphate Solution			
e	0.0	7.0	..	..	..
f	..	4.0	4.3	0.4	2
g	25.0	2.15	2.2	18.8	94

The TAPPI sulphide test was repeated on a sample of sodium thiosulphate at pH 2.0 and the evolved gases passed through acidified cadmium chloride solution as in the B-T test. This showed that no hydrogen sulphide was released from the thiosulphate. It was also found that the acidified cadmium chloride solution had no iodine demand. It was assumed that the gas evolved was sulphur dioxide.

In trying to determine a proper millivoltmeter reading for the sulphide endpoint in the Borlew-Pascoe method, a standard solution of sodium sulphide was checked by this method as well as by acidifying it with acetic acid after the addition of excess iodine. The iodine not consumed was found by titration with sodium thiosulphate. Because of the rapid oxidation of the sulphide with stirring (and perhaps other factors as yet unknown) in the B-P method, the amount of silver nitrate necessary to throw the millivoltmeter reading far on the negative side was approximately 8 percent less than the quantity of iodine consumed by the sulphide. Not only does that make it impossible to establish an endpoint (other than where the inflection takes a steep turn downward) but organic and presumably other sulphur-containing materials present in black liquor also consume silver nitrate very slowly and affect the slope of the inflection of the curve. It has been found that adding silver nitrate to a black liquor sample already titrated until the millivoltmeter reads on the negative side increases the negative reading but then, if no more silver nitrate is added and stirring of the sample is continued, the millivoltmeter reading becomes less negative as the silver nitrate is apparently slowly consumed by some constituent of the black liquor.

With regards to the original Bergstroem-Trobeck analysis for hydrogen sulphide, mercaptans, and organic sulphide, hydrogen sulphide will give a precipitate with any of the absorbing solutions so the absorption train should have a sufficient number of acidified cadmium chloride-filled bottles to completely react with this constituent before the gases pass through the other absorption solutions. It might be preferable to absorb sulphide and mercaptans together and separate them by the method described by Klason (6) or Hägglund and Hedlund (7). It was also found that using ammonium chloride solution to evolve the sulphur gases from some of the samples left them at a pH near 7.0 at the end of the reflux period but that is slightly variable (6.4 to 8.4).

This work on the comparison of various methods of determining sulphide sulphur in black liquor indicates that considerable uncertainty surrounds the use of any of the procedures discussed. This is not only because of the fact that different sulphur compounds besides the sulphide are measured by some of the methods but because black liquor itself is so unstable, variable in alkalinity, and contains a great variety of sulphur compounds (many probably unknown) in varying proportion which may react among themselves. Perhaps the most important factor in the analysis is that "black liquor just loves to oxidize" and this can cause very serious errors, particularly if the analyst is not aware of it.

For our studies on the oxidation of black liquor we have chosen the Borlew-Pascoe method because it is the simplest and most rapid way of carrying out the analyses. The sulphite in the black liquor does not interfere and if the analysis is carried out rapidly there is not a very great error due to oxidation of the sample during the titration. Although the endpoint is arbitrarily chosen, it is very closely reproducible. This method also appears to be more accurate than the other methods on liquor samples in which the sulphide sulphur is almost or completely oxidized. Another possible advantage to this method is that it may be possible to measure mercaptans by continuing the titration to get another plateau and inflection in the curve. Although we have not found any evidence that mercaptans are present in the Thilmany black liquor, we have used this method to show that they appear in our digester relief and turpentine condensate.

In either modification of the TAPPI procedure, it would be desirable to remove the sulphite first by precipitation with barium chloride. This is not too satisfactory as some oxidation of the sulphide occurs. If the sulphide is evolved at a pH of 4.0, there will be an appreciable amount of sulphur dioxide released from the thiosulphate in the black liquor. This sulphur dioxide may react with the hydrogen sulphide to give sulphur and hence a lower sulphide value, or, if it doesn't react, will give a higher result for sulphide. Evolution of the sulphide with ammonium chloride or at a higher pH with acid should reduce the error from this source. Since the evolved gases are absorbed and reacted with iodine solution, there is no differentiation of mercaptans if they are present. It would be possible to separate the sulphur dioxide and hydrogen sulphide that do not react before the iodine absorption bottles by using the method given by Collins (8) for analyzing for these two gases in a mixture.

In the use of the Bergstroem-Trobeck qualitative test for sulphide in black liquor there appear no faults. When used as a quantitative procedure as originally recommended by Bergstroem and Trobeck for measuring the hydrogen sulphide, mercaptans, and organic sulphides in black liquor, this gets to be a cumbersome procedure requiring considerable time and equipment for the analyses. Sulphur dioxide evolved in this test will not give an iodine demand to, or a precipitate in, the acidified $CdCl_2$ solution or a precipitate with the Hg $(CN)_2$ or $HgCl_2$ solutions. The sulphite should be removed from the sample to prevent the reaction of sulphur dioxide with hydrogen sulphide during the evolution and the sulphide should be evolved at a pH somewhat higher than 4.0 or with ammonium chloride solution so as not to release sulphur dioxide from the thiosulphate present. As in other procedures, removal of sulphite results in oxidation of sulphide due to contact of the liquor sample with air. In using this method, it is extremely important that a sufficient number of acidified $CdCl_2$-filled absorption bottles be used in the sampling train to absorb all the hydrogen sulphide as that gas gives precipitates in subsequent absorption bottles for mercaptans and organic sulphides. Another drawback to this procedure is the difficulty in collecting the precipitates from the absorption flasks. It has also been stated privately by other investigators that it is difficult to carry the evolved mercaptans through the acidified Cd-Cl_2 absorbing solutions by the stream of inert gas. The fact that some of the acidified cadmium chloride solutions do not contain a precipitate but have an iodine demand, even for a liquor sample which is shown to be 100 percent oxidized by the qualitative test for sulphide, may have some connection with this, although it is difficult to see why the mercaptans would not oxidize at least as readily as the sodium sulphide.

In the modification of the Berg-

stroem-Trobeck method where the total iodine demand of the acidified $CdCl_2$ solutions and the final iodine solution-filled absorption bottle is measured, a higher sulphide value will result than if the precipitate is collected and its iodine consumption upon acidification measured apart from the absorption solutions.

While the Moltzau method of analysis is almost as rapid as the B-P procedure, it does not give results showing as much sulphide present as the TAPPI and B-P methods. This, in all probability, is due to the presence of organic materials in the black liquor which have the same action as formaldehyde in the titration for sulphide. Since the sulphite is titrated with acid above pH 83 in the presence of formaldehyde, it is necessary to remove the sulphite from the liquor sample. Here again, the risk of oxidation of the sulphide in removing the sulphite and in the stirring of the sample during titration may introduce considerable error.

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7. Hägglund, E., and Hedlund, R., Svensk Papperstidn. 36, no. 7: 258-260 (April 15, 1933).
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New Papers for New Inks

By

GEORGE CRAMER

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The Graphic Arts industry has in the past twenty-five years gone through some revolutionary advancements in order to keep up with the requirements of the times. As you all know, speed and more speed has been the all-important pass word. The terrific demand for all kinds of printed articles ranging from food containers and display pieces to magazines, have meant changes in equipment, paper and in ink.

The first of the great advancements came with the introduction of the heat-set type of ink. These inks were formulated to dry very quickly at elevated temperatures. The elevated temperatures meant added pieces of equipment on printing presses. It also meant special composition of the type of paper to be run. The development of the machine coated type of paper was the direct outcome of this advance in the Graphic Arts process. Problems of many sorts have arisen with this type of heat set ink, and in some instances, even though the process continues, efforts are being made to circumvent it because of the many shortcomings and difficulties evident at present. The paper industry knows that some of the requirements which had to be met in making a paper for this type of ink have been rather severe and in spite of every effort which the paper industry has made to improve the situation, the printer is still pressed by many serious problems which he expects to avoid by considering still newer methods.

The next step in the process in trying to do a better job for the Graphic Arts led the ink industry into serious consideration of the types of ink that dry by the addition of moisture. This type of ink has found considerable applications and fills a very definite need in many directions. It has, however, not been the answer to the problems as currently experienced by that part of the industry now resorting to the heat set type. In the case of the moisture-set type of ink, paper has not been the obstructing element as in the case of the development of heat-set types. Even so, problems have arisen in the application of this type of ink which have been principally due to surface particles of either paper dust or paper coating. The glycol solvents used in this type of ink seem to have a greater effect on paper softening than was originaly anticipated. The Graphic Arts still not being satisfied was quick to look forward to still other possibilities in connection with the moisture set type of ink. It was thought at one time or another that soluble protein materials used as a base might assist some in overcoming what difficulties were experienced in the original formulations. Further development is proceeding. Papers having finishes or coatings of relatively high pigment content seem to be somewhat more satisfactory than those wherein the usual machine coated stocks were experimented with. We doubt very much whether the paper industry became much involved in this endeavor. However, it is the writer's impression that the paper industry could help considerably in the further development of printing of the moisture set type of ink.

For years the printer has been looking for inks that would never dry on the press but would dry almost immediately upon being impressed upon paper. An ink such as this is currently being made and developed. Apparently in this case the stock to be used is an important factor and in every instance we have found that the more highly coated stocks do a superior job. We doubt very much whether the industry would be required to make anything very special for this type of ink except that there is still a possibility that a machine coated paper more nearly comparable to the regular coated would be a decided advantage. The ink industry still has a few problems to be settled before this type of ink can be made to be really successful. Undoubtedly whatever improvements are to be made may have to be made in conjunction with the press builders rather than with the paper industry.

There are many other possibilities of ink formulation, next of which seems to be that in which an ink is based on a high resin content. In this instance, combinations can be made of dispersed resins and dispersed plastics which happen to have good stability on the press and good printing qualities. However, at the moment a proper type of paper which will allow this type of ink to get a more secure bind on the stock itself is not available. In this combination of pigments, resins and plastics, the ink depends entirely on the nature of the coating of the paper for its binding qualities. There is, at present, no known stock that allows an ink of this nature to be adopted for general production but the ink maker has hopes that the paper industry will oblige. It appears as though a paper coating or an uncoated paper having a film forming base which could be annealed to the ink by reason of the type of solvent used in the ink itself would be needed.

At this point, I think I would again like to emphasize the objective which the ink industry has in considering these and other types of developments in ink making. As we mentioned before, the objective is to be able to go faster and faster and at the moment it appears as though ink is one of those factors which is responsible for not being able to go at these elevated speeds. It appears as though mechanical means such as heat, dampening, etc., are likely to be too slow, too expensive and too sensitive to accomplish the objective and apparently mechanical means may have to be our method of approach. The smaller printer of course is still looking for the type of ink that does not necessarily have to be overly fast but he is interested in some that might be developed by means of a reaction between the paper and the ink itself. The ink industry has on occa-

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sions made special inks which were practically non-drying and yet when applied to such surfaces as cellulose acetate, cellulose nitrate or even vinyl films dry almost immediately by the process of absorption. This process being very similar to that currently employed in the printing of newspapers, without its shortcomings. However, it is our impression that the paper industry might consider the possibility of using some such materials in their paper coatings as possible absorption media for inks of this special and plastic nature. Such paper coatings could be based on nitrocellulose, ethyl cellulose, ureas, melamines and vinyls and thus be compatible with the ink involved.

There are still other types of inks wherein full advantage can be taken of penetration and absorption. In this case, the materials might be those that are completely soluble in any number of solvents or those in which an ink contains materials such as casein, starch, methyl cellulose, CMC, etc. For this type it might be necessary to have a special paper containing an inner layer impervious to the water based types, in order to limit the degree of penetration and consequently the percentage of strike-through or show-through. Inks of this nature could be made to operate at extremely high speeds without the use of other mechanical means such as heat, moisture, static or ultra-violet. Probably it might be necessary to consider the so-called wet-strength paper as a base even for coated papers rather than those currently in general use for this solvent type ink.

Several years ago, a special ink using a wax and resin carrier was run on a production basis. This product contained plastic materials which were heated in order to change them to the liquid form and thus make them of proper consistency for distribution on the press. A chilled paper was the medium used in this case to set the inks. It occurs to us as though a special type of paper probably more receptive to a formulation of this kind would have avoided the almost complete failure and abandonment of this type of printing.

The ink chemist's imagination carries him into fields which at the moment might almost be considered somewhat fantastic but we believe that there are materials which are available today or may be developed in the near future which could be set after printing, by chemicals incorporated in the paper or applied as a gas after printing.

There is also a possibility of making ink formulations that could be coagulated by means of X-Ray or high voltages. The Graphic Arts industry has recently been introduced to a new process, a so-called xerography which depends essentially on the effects of static. At the moment this new process is still in its infancy but it appears that special paper qualities may be necessary in order to make the process successful.

Our creative faculty once more leads us to the possibility of reactive types of papers, for example, papers that would either be on the alkaline or acid side. Thus, a resin could be used that would be precipitated by the alkalinity or on the other hand, a resin or plastic could be fixed by means of the acid. Our thoughts may seem to have been running a bit wild, but imagination is the thing that leads us into development of better inks and better papers for the Graphic Arts.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information to our readers are included herein.***

2,462,159—Cellulose Derivative Combined with N-Alkoxymethyl Polyamide. Robert L. Brown, Buffalo, N. Y., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed June 6, 1944—Issued Feb. 22, 1949.

The process which comprises dissolving in a common solvent therefor, a member of the class consisting of linear polyamides obtained by reacting by self-polymerization a monoaminomonocarboxylic acid, by reacting in substantially equimolecular amounts a diamine with a dibasic carboxylic acid, by reacting in substantially equimolecular amounts a monoaminomonohydric alcohol with a dibasic carboxylic acid, and by reacting the amide-forming derivatives of said reactants; and a cellulose derivative of the class consisting of cellulose esters and cellulose ethers, said cellulose derivative having free hydroxyl groups, and reacting the linear polyamide with formaldehyde and a substance of the class consisting of monomeric alcohols, and mercaptans in which the thiol groups are attached to an aliphatic carbon atom, in the presence of an acidic substance.

2,462,185—Moistureproof, Heat-Sealable Wrapping Material and Process. Paul Matthew Hauser, Kenmore, N. Y., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed February 19, 1946—Issued Feb. 22, 1949.

Moistureproof, heat-sealable sheet wrapping material comprising a non-fibrous base film of regenerated cellulose provided with a continuous sub-coating comprising essentially a resinous aliphatic ether derivative of a methylol melamine wherein the ether radical of said derivative contains from 3 to 8 carbon atoms, and nitrocellulose, wherein the ratio of the resinous ether derivative to nitrocellulose is within the range of 20/80 to 75/25, and a continuous top-coating comprising essentially a vinylidene chloride-acrylonitrile copolymer containing at least 80% vinylidene chloride.

2,462,194 — Process for the Simultaneous Production of Chlorine Dioxide and Nitrogen Trichloride. Willis S. Hutchinson, St. Paul, Minn., assignor to Mathieson Chemical Corporation, a corporation of Virginia. Filed October 21, 1944—Issued Feb. 22, 1949.

A process for the simultaneous generation of chlorine dioxide and nitrogen trichloride which comprises bringing hydrogen chloride into contact in a reaction zone with a chlorate radical and an ammonium radical provided by a reaction mass of the group of water-soluble salts consisting of (*a*) ammonium chlorate and (*b*) a mixture of an ammonium compound and a chlorate, a sufficient amount of moisture being present to effect the reaction, and withdrawing from the reaction zone a gaseous mixture of chlorine dioxide and nitrogen trichloride.

2,462,210—Starch Esters. Owen A. Moe, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware. Filed May 30, 1945—Issued Feb. 22, 1949.

Process of preparing starch esters which comprises contacting starch with aqueous formic acid containing from 40% to 85% formic acid to produce a starch formate having a formyl content of from 5% to 20%, precipitating and separating the starch formate from the reaction mixture, and esterifying the starch formate with an organic acylating agent in which the acyl group has at least three carbon atoms.

2,462,253—Production and Use of Synthetic Resin. Raymond G. Booty, Elmwood Park, Ill., assignor to Weyerhaeuser Timber Company, Tacoma, Wash. Filed Jan. 25, 1944—Issued Feb. 22, 1949.

The method which comprises heating and condensing to a dissolved water-soluble resin-forming condensation product 1 mole of phenol and about 1.87 moles of formaldehyde in water in the presence of alkali-metal-hydroxide catalyst and in the presence of methyl cellulose of the type soluble in alkaline aqueous solution, said methyl cellulose being dispersed in quantity to yield a liquid reaction mass, and conducting said reaction to a stage short of solidification of the mass when cooled to 25° C., thereby providing an alkaline aqueous solution of reactive resin-forming condensation product having viscosity derived in part from the methyl cellulose, forming a film-layer of aqueous liquid glue containing said resin-forming solution as a glue base between layers of solid material including at least one glue-absorbent layer, whereby the viscosity of the glue retards penetration of glue into said layer, and applying heat and mechanical pressure to said layers with said interfacial glue and drying out and thermosetting the resin-forming content thereof.

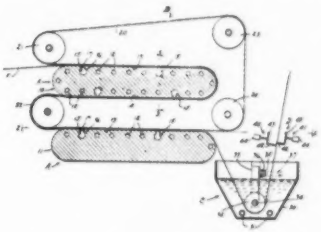
2,462,252—Production and Use of Synthetic Resin. Raymond G. Booty, Elmwood Park, Ill., assignor to Weyerhaeuser Timber Company, Tacoma, Wash., a corporation of Washington. Filed January 25, 1944—Issued Feb. 22, 1949.

The method which comprises heating and condensing to a dissolved water-soluble resin-forming condensation product 1 mole of phenol and about 1.87 moles of formaldehyde in water in the presence of alkali-metal-hydroxide catalyst and in the presence of from about 2 to about 9 parts by weight of polyvinyl alcohol to 100 parts of phenol and conducting said reaction to a stage

short of solidification of the mass when cooled to 25° C., thereby providing an alkaline aqueous solution of reactive resin-forming condensation product having viscosity derived in part from the polyvinyl alcohol, forming a film-layer of aqueous liquid glue containing said resin-forming solution as a glue base between layers of solid material including at least one glue-absorbent layer, whereby the viscosity of the glue retards penetration of glue into said layer, and applying heat and mechanical pressure to said layers with said interfacial glue and drying out and thermosetting the resin-forming content thereof.

2,462,297—Apparatus for Saturating Fabrics. Floyd W. Adams, Los Angeles, Calif., assignor to Los Angeles Paper Box Factory, Los Angeles, Calif. Filed April 9, 1945—Issued Feb. 22, 1949.

Apparatus for impregnating absorbent sheets, comprising ironing platen means having a plurality of saturant circulating channels opening



at the surface thereof, and means for moving an absorbent sheet in surface engagement with the platen means to alternately pick up saturant from openings in the channels and iron said saturant into the interstices of the sheet, said platen means including a plurality of the transverse passageways connected to a source to heat at least one surface of said platen means between and in spaced relation to said channel openings, said latter means comprising an endless perforated conveyor belt.

2,462,354—Organic Compound Polymerization Process. Merlin M. Brubaker, Delaware County, and Ralph A. Jacobson, Landenburg, Pa., assignors to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed Sept. 17, 1942—Issued Feb. 22, 1949.

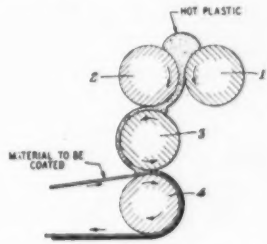
The process for preparing resinous material through polymerization which comprises forming an aqueous dispersion containing a monoethylenically-unsaturated, polymerizable, organic compound having a terminal ethylenic double bond and molecular weight in excess of 30, said aqueous medium containing from about .01% to 5%, based on the total weight of monomers present, of an oxygen-yielding polymerization catalyst and from about .001% to 5%, based on the quantity of monomer, of an inorganic oxidizable sulfoxy compound from the group consisting of sulfur dioxide, sodium bisulfite, sodium sulfite, ammonium bisulfite, sodium hydrosulfite, and sodium thiosulfite, and then maintaining the resulting dispersion at a temperature of from 0° C. to 125° C. until polymerization of the polymerizable components present therein is essentially complete.

2,462,390 — Method of Preparing Aqueous Emulsions of Polyethylene. Jesse Harmon, Wilmington, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed June 10, 1946—Issued Feb. 22, 1949.

A process for polymerizing ethylene in aqueous medium and directly obtaining the resulting ethylene polymer in the form of a stable dispersion in the aqueous medium, said process comprising subjecting ethylene as the sole polymerizable constituent to polymerizing temperature and a pressure of from 200 to 1000 atmospheres in intimate contact with a buffered aqueous solution of an alkali persulfate having a pH between 7.5 and 11 and containing from 3% to 20%, based on the weight of the water present, of said persulfate, and containing the reaction until absorption of the ethylene substantially ceases, the aqueous dispersion directly obtained by said process containing as the sole agent effecting the stabilization of said dispersion the surface active agent formed in situ during polymerization of the ethylene in contact with said aqueous solution of persulfate.

2,462,331 — Polyethylene Compositions. Clayton S. Myers, Westfield, N. J., assignor to Bakelite Corporation, a corporation of New Jersey. Filed April 13, 1944—Issued Feb. 22, 1949.

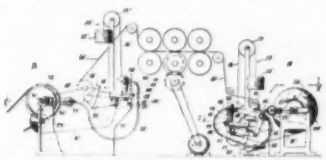
Product comprising a polymer of ethylene characterized by a crystalline structure of narrow



softening temperature range and adhesion to rolls at temperatures of 100° C. and above and having incorporated therein from 0.05 to 9 per cent of a modifying agent selected from the group consisting of polyhydric alcohol esters and metal salts of monocarboxylic fatty acids having from 12 to 24 carbon atoms, the modified polymer being characterized by ready release from rolls at temperatures above the adhesion temperature of the unmodified polymer.

2,462,558—Tension Control Means for Running Webs. Joseph S. Scheuermann and Thomas N. Carter, Chicago, Ill., assignors to Cameron Machine Company, Brooklyn, N. Y. Filed June 15, 1944—Issued Feb. 22, 1949.

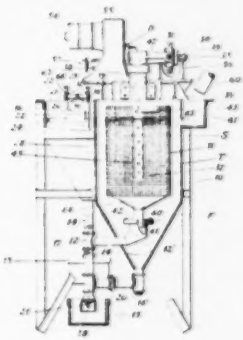
In a machine employing tension control for a tensioned running web of flexible material, in which machine a variable speed-control device is subjected to a progressively varying load of wound web material and in which the effectiveness of said speed-control device is varied by a movement of traverse, as well as by reciprocations, of a reciprocatory carriage having a roll that engages a bight in said running web, and



in which both the movement of traverse and the reciprocations of the carriage are controlled by said web under tension acting on said roll and by a power device for exerting a force on the carriage in opposition to that exerted by the web on said roll, means to vary the effectiveness of said speed-control device in response to a progressive change, as well as to fluctuations, in tension of the web including: a fluid-actuated operating device, a duct leading from a source of supply of fluid under pressure to said fluid-actuated operating device, valve-mechanism interposed in said duct to control the passage of fluid from the source of supply to the fluid-actuated operating device or from the fluid-actuated operating device to an exhaust, two controllers for said valve-mechanism acting in opposition to each other, and means to operate one of said controllers in response to movements of said carriage and to the action of the other controller to admit or cut off fluid-pressure from said source of supply to said fluid-actuated operating device, the other of said controllers being responsive to fluid-pressure in said fluid-actuated operating device and to the action of the first-mentioned controller to open or close said exhaust.

2,463,526—Pulp Screening Apparatus. Thomas A. Dickson, Denver, Colo., assignor to Colorado Iron Works Company, Denver, Colo. Filed Jan. 9, 1945—Issued March 8, 1949.

Apparatus for screening pulp containing particles of different size, comprising a tank adapted to contain a body of pulp to be screened and

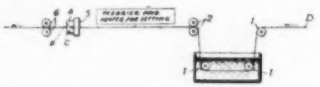


having a pair of side by side compartments, one of which compartment is connected with said tank at the lower end thereof, a cylindrical screen within said tank connected at the lower end with the other compartment, a substantially cone-shaped metal plate connected to the lower end of the screen for supporting the same, means for moving said screen transversely to the normal direction of movement of particles through said screen, an outlet provided with a mechanically actuated valve arranged to discharge pulp flowing from the lower end of said tank and an outlet provided with a mechanically actuated valve arranged to discharge pulp flowing from said screen, including control floats in each of said compartments for controlling the corresponding discharge valve in response to level fluctuations in said compartments.

2,463,618—Process for Producing Fibrous Material and the Product. Georges Heberlein, Georg Heberlein, Ernst Weiss, Theodor Odinga, and Karl Risch, Wattwil, Switzerland, assignors to Heberlein Patent Corporation, New York, N. Y. Filed Sept. 12, 1944—Issued March 8, 1949.

A process for treating cellulosic yarn to produce a wool effect which comprises, impregnating the yarn with formaldehyde capable of reacting bifunctionally with hydroxy groups of cellulse and an acid catalyst, supertwisting the fibrous

yarn, baking the supertwisted impregnated yarn at about 100° C. or above, and then detwisting



the cellulosic yarn to produce a wool effect which is substantially fast to washing.

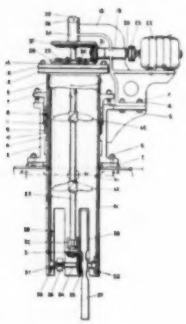
2,463,663—Magnesium Oxychloride Chloride Coating Material. Albert I. Wand, Pasadena, Calif., assignor to Mundet Cork Corporation, Brooklyn, N. Y. Filed Sept. 12, 1945—Issued March 8, 1949.

A coherent coating comprising a composition of the following materials provided by weight in substantially the following percentages:

	Per cent
Granulated cork	2¼
Asbestos	2¼
Talc	14¼
Expanded vermiculite	3
Limerock	23
Magnesite	29
Flake magnesium chloride	26

2,463,886—Mixing Apparatus. George John Langmyhr, Sarnia, Ontario, Canada. Filed Sept. 29, 1945—Issued March 8, 1949.

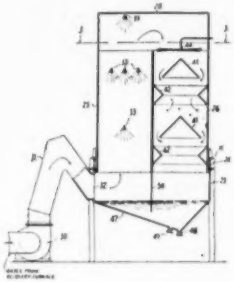
A mixing device for liquids and the like comprising a vertically mounted revolving tube im-



mersed into the liquid to be mixed, a vertical shaft located in said tube and rotating in a vertical plane impellers mounted at the base of said tube, said impellers rotating through longitudinal slots in the wall of said revolving tube, horizontally rotating downwardly thrusting propellers mounted on said shaft above the arc of said rotating impellers, a plurality of ports in the walls of said tube through which fluid is drawn into said tube above the arc of said impellers, common means to rotate said tube and impellers.

2,463,757—Apparatus for the Recovery of Heat and Chemicals from Furnace Gases. Frederic G. Ely, Short Hills, N. J., and Charles E. Rogers, Kew Gardens, N. Y., assignors to The Babcock & Wilcox Company, Jersey City, N. J. Filed Oct. 16, 1942—Issued March 8, 1949.

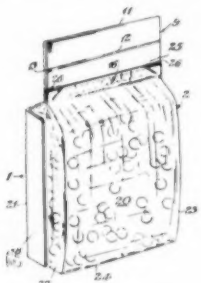
Apparatus for the recovery of heat and chemicals from pulp residual liquor comprising in combination, a furnace for incinerating concentrated liquor, an induced draft fan arranged to receive solids-laden heating gases from said furnace, a spray tower at the discharge side of said fan and arranged to receive said solids-laden heating gases under a super-atmospheric pressure from said fan, means for concentrating pulp residual liquor and recovering solids from said



heating gases in said spray tower, said tower having a bottom constructed to retain a pool of concentrated liquor and a heating gas inlet in the side thereof adjacent the normal level of said pool, an inverted V-shaped conduit connecting said fan and heating gas inlet, and means for delivering the concentrated liquor from the bottom of said spray tower to said furnace.

2,463,992—Bag for Merchandising. George Arlington Moore, New York, N. Y., assignor to Reynolds Metals Company, Richmond, Va. Filed March 16, 1946—Issued March 8, 1949.

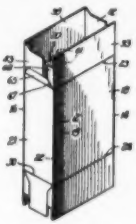
A semi-rigid commercial package which comprises a bag of the gusset type having front and rear panels and gusset end panels formed of



clear heat-sealing sheet material, and a cradle of flat, stiff but non-resilient sheet material bonded to at least one panel of the bag whereby the bag may be supported in an upright position and the merchandise be seen through a substantial portion of the bag, said cradle having a mouth closure which projects above the bag when the bag is filled and being permanently bonded to the rear panel at the mouth edge, and strips of thermoplastic material on opposite faces of the closure near its end, said closure being folded upon itself to bring the strips of adhesive into contact with the front and back panels of the bag at the mouth and to leave an unsealed edge on the front panel so that it may be pulled from the adhesive to open the bag, said closure having at least one transverse score line located above the strip of thermoplastic material and being further foldable upon itself to close the bag during use.

2,464,065—Carton. Julius A. Zinn, Jr., Chicago, Ill. Filed March 19, 1947—Issued March 8, 1949.

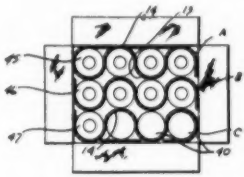
A blank comprising a flat sheet having a first panel, a second panel, a third panel, a fourth panel and a connector section, said panels and connector section being divided from each other by crease lines, said connector section being adapted to lie flatwise against said first panel to



provide a tube of rectangular cross section, one edge portion of said blank being formed to provide a flap for said first panel and to provide a flap for said third panel, said flap for said third panel being provided with tabs projecting from the ends thereof, said connector section being provided with a flap, said flap for said first panel being provided with a web extending over said second panel, said second panel being provided with a web integrally connected with said first mentioned web through a crease line and integrally connected through a crease line with one of said tabs on the flap for said third panel, the flap of said connector section being provided with a web extending over said fourth panel, said fourth panel being provided with a web, said last mentioned webs being integrally connected together through a crease line and integrally connected through a crease line to the adjacent tab of the flap for said third panel.

2,464,154—Partition for Containers. Louis W. Roselius, Lake Success, N. Y., assignor to S & S Corrugated Paper Machinery Co., Inc., Brooklyn, N. Y. Filed Sept. 19, 1947—Issued March 8, 1949.

A cellular structure comprising a plurality of waxed double face corrugated boards each hav-



ing a succession of waves producing oppositely directed successive troughs and a plurality of flat double face corrugated boards, the flat boards and the waved boards alternately in the structure, the flat boards being connected to the crests of the waves of the waved boards.

2,464,128—Cellulose Organic Acid Ester Compositions Containing 2,2'-Dihydroxy Benzalazine. William M. Gearhart and Lester W. A. Meyer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N. Y. Filed July 23, 1947—Issued March 8, 1949.

A cellulose organic acid ester composition which fluoresces in ultra-violet light, comprising a cellulose ester selected from the group consisting of the cellulose simple esters and cellulose mixed esters of the fatty acids containing from 2 to 4 carbon atoms, and, as a fluorescing agent, from 0.05 per cent to 1 per cent, based on the weight of the cellulose ester, of 2,2'-dihydroxy benzalazine.

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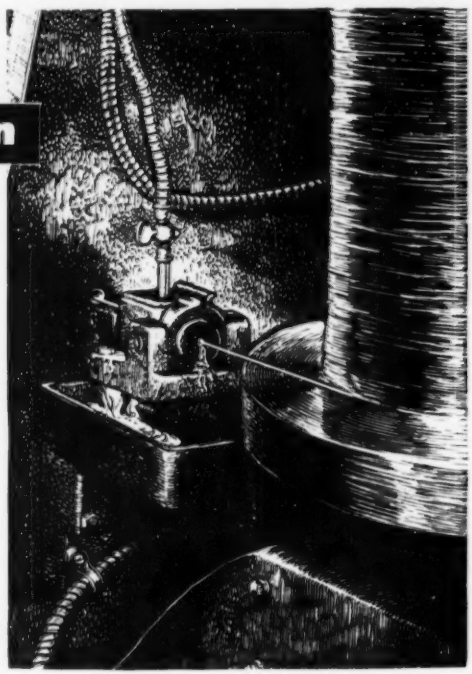

integration

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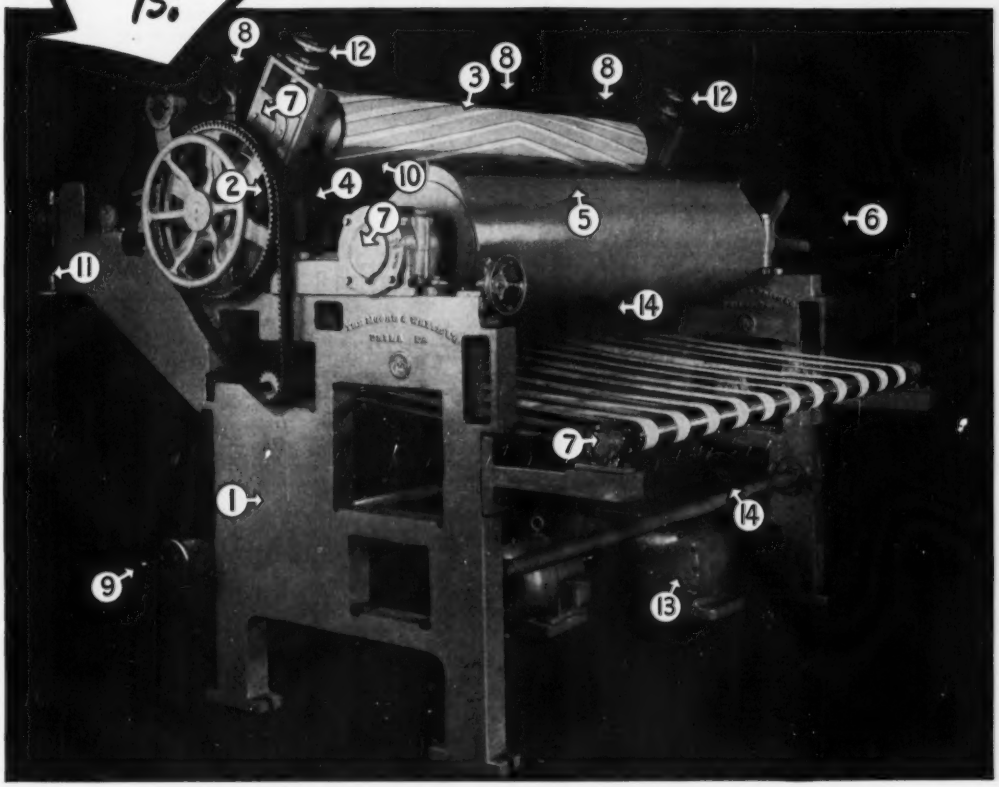
Each step in the specialized production of paper machine wires—including drawing and annealing—is performed by Appleton Wire Works, Inc, . . . another reason why Appleton Wires are Good Wires.

APPLETON WIRE WORKS, INC.
APPLETON, WISCONSIN

Here it is!

NEW Moore & White Cutter



Adaptable to duplex or triplex installations

Carefully check these features—

1. Interchangeable box-section frames.

2. Heavy-duty centrifugal-cast drum, heads pressed in, outside diameter of drum 15", balanced for high-speed operation.

3. Squeeze-roll made of heavy-duty pipe 9" diameter, rubber-covered, pressed-in heads.

4. Bed for stationary knife, extra heavy casting. Bed-knife adjustable.

5. Revolving knife is held solidly to balanced cylindrical casting.

6. All drive gears are cast iron. All teeth cut for close running tolerances to eliminate backlash.

7. All moving parts encased in antifriction bearings. All bearings easily reached for lubricating purposes. Because of this feature, the horsepower required for this type sheet-cutter is considerably less than required by former cutters.

8. Roller bearing top-slitters, double edge bottom-slitters. Slitters are driven 20 percent faster than the sheet travels to insure clean-cut edges.

9. Standard sheet lengths 18" x 72". The sheet lengths are adjustable from minimum to maximum, through adjustment of one hand-wheel. No gears or step-pulleys to change or adjust. Once the sheet length is set, it remains constant. Sheet lengths over 72" obtainable, if desired.

10. Doctor-board is adjustable and cannot sag, due to heavy backing plate.

11. Lead-in paper-roll adjustable up or down 6", allowing a wide range of adjustments to meet condition of rolls being sheeted.

12. Squeeze-roll brackets adjustable.

13. P.I.V. gear drives rotary knife. May be installed inside or outside of frame.

14. All prime-mover gears are silent-chain-type, fully enclosed with chain-tighteners.

These cutters will cut with a high degree of accuracy on both widths and lengths.

They are built to standard widths of 50, 62, 72, 84, 96, 110 and 124 inches. Additional widths are available in special heavy-duty types. Write today for complete information.

The MOORE & WHITE Company

15TH STREET AND LEHIGH AVENUE • PHILADELPHIA 32, PA.

CUSTOM-BUILT MACHINES FOR MAKERS OF PAPER AND PAPERBOARD

PRICES . . . . . .

The prices below reflect general market quotations applying to those standard grades in which the normal volume of business is being done.

NEW YORK

Delivered New York

Standard News, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. Mill, Varying Freight Allowances

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.25/$6.75
No. 1 Wrapping Rolls	7.00/ 7.50
Standard Bag	5.75/ 6.25

Tissues— per ream 24x36 (480) 10/11 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	$160.00/	—
Wh. No. 1 M. G.	150.00/	—
Wh. No. 1½	150.00/	—
Wh. No. 2	1.17½/	1.20
Kraft Anti-Tar	1.45 /	1.50
Shrd. Wh. No. 1 per lb.	.11½/	—

Toilet— per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.95/	—
Bleached 4½x5	8.80/	—
Per Case of 50 rolls—2000 sheets		
Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.80/	—
Per Case of 100 rolls—1000 sheets		
Facial, 4½ x 5, 2 ply	$8.95/$9.45	

Paper Towels—per case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9½	$5.25
Br. Sr. M'tif'd 10x12	3.60
Br. Jr. M'tif'd 9½x9¼	3.10
Br. Jr. Sgl. fold 10x10¼	3.15
Blchd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag 40 lb., sheets*	$15.05/$17.50
Reg. Jute M.F. Manila, sheets*	13.50/ 15.50
Wrapping Manila	8.75/ 10.50
Printing Manila	10.00/ 11.00

* Less usual allowance for rolls.

Boards, per ton—

Filled News	$70.00/ —
Plain Chip	70.00/ —
Blchd. Mla. Lcd. Chip*	92.50/ —
White Pat. coated*	110.00/
Kraft Liners 42 lb.	100.00/
Kraft Corr. .009	105.00/
Binders Boards	110.00/116.00

* Base Prices per 10 tons. Less than 10 tonbut over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributors' resale prices, all deliveries in Zone 1.

Rag Content Bonds and Ledgers—

White, 20 lb.

Bonds

	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.55
25% Rag	24.85/ 26.80

Ledgers

	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers

White, 20 lb.

Bonds

	4 Ctns.
	per cwt.
No. 1	$17.50/ —
No. 2	16.65/ 16.75
No. 4	15.60/ 15.95

Ledgers

	4 Ctns.
	per cwt.
No. 1	$18.80/ —
No. 2	18.05/ —

White Book

	Case
	per cwt.
Conversion Coated	
No. 1	$19.75/$20.90
No. 2	19.25/ 19.65
No. 3	17.75/ 18.90
Machine Coated	
No. 1	16.40/ 16.65
No. 2	14.90/ 15.15
Uncoated	
No. 1 Antique (Watermarked)	16.40/ 17.90
Offset	15.15/ 16.65
A Grade E. F.	15.40/ —
A Grade S. C.	15.90/ 16.15
B Grade E. F.	14.90/ 15.15
B Grade S. C.	15.40/ 15.65

WORLD WOOD PULP MARKETS

Third Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports Full freight allowance		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ —	$65.00/ —			
Soda, Bleached	113.00/ —	113.00/ —		Competitive	
Sulphate, Bleached	118.00/126.00	126.50/ —	125.00/128.00		
Sulphate, Unbl'd North'n	— / —	82.50/105.00	94.00/ —	with	
Sulphate, Unbl'd South'n	80.00/ —				
Sulphite Blchd. (S'ftw'd)	118.00/ —	118.00/ —	118.00/ —	Domestic	Competitive
Sulphite, Blchd. (H'dw'd)	113.00/ —				
Sulphite, Unbleached	100.00/ —	100.00/ —	100.00/ —	Grades	
Sulphite, Unbl'd (Glassine)	105.00/ —	105.00/ —	104.00/105.00		

WASTE PAPER MARKET

Prices to Mills (Per Ton)

Deld. Local Mills; F.o.b. Cars

	New York Aug. 23		Philadelphia Aug. 16		Boston Aug. 19		Chicago Aug. 3	
No. 1 Mixed Paper	$7.00/	$8.00	$5.00/	$6.00	$5.00/	—	$5.00/	—
Boxboard Cuts	7.00/	8.00	4.00/	5.00	— /	5.00	8.00/	—
Mill Wrappers	11.00/	12.00	7.00/	9.00	— /	9.00	7.00/	—
No. 1 News	9.00/	10.00	9.00/	10.00	10.00/	11.00	11.00/	—
Over-issue News	15.00/	16.00	12.00/	14.00	8.00/	10.50	14.00/	—
Corrugated Containers	17.00/	20.00	15.00/	16.00	15.00/	16.00	15.00/	—
New Corrugated Cuts	18.00/	20.00	20.00/	23.00	16.00/	—	19.00/	—
Double Kraft Ld. Corr. Cuts	30.00/	32.00	30.00/	35.00	25.00/	—	30.00/	—
Used Kraft Bags	25.00/	30.00	18.00/	22.00	25.00/	30.00	20.00/	—
No. 1 Brown Kraft Paper	25.00/	30.00	25.00/	30.00	25.00/	—	15.00/	—
Super Resorted Br. Kraft	25.00/	30.00	35.00/	—	40.00/	—	30.00/	—
New Br. Kraft Env. Cuts	65.00/	70.00	60.00/	65.00	60.00/	65.00	50.00/	—
New Br. Kraft Cuts	40.00/	45.00	55.00/	—	45.00/	—	45.00/	—
No. 1 Gdwd. Shvs.	15.00/	20.00	15.00/	—	25.00/	—	21.00/	—
White Newsblanks	45.00/	50.00	35.00/	—	— /	50.00	30.00/	—
No. 1 Flyleaf Shvs.	25.00/	30.00	15.00/	18.00	35.00/	45.00	30.00/	—
No. 1 Soft Wht. Shvs.	65.00/	70.00	60.00/	65.00	70.00/	80.00	55.00/	—
Super Soft Wht. Shvs.	80.00/	85.00	65.00/	70.00	80.00/	90.00	60.00/	—
Hd. Wht. Shvs.	85.00/	95.00	75.00/	80.00	80.00/	90.00	80.00/	—
Hd. Wht. Env. Cuts.	100.00/	105.00	90.00/	95.00	90.00/	105.00	90.00/	—
New Manila Env. Cuts.	65.00/	75.00	60.00/	—	60.00/	70.00	55.00/	—
Col. Tab Cards	30.00/	35.00	20.00/	25.00	35.00/	—	30.00/	—
Manila Tab Cards	65.00/	75.00	60.00/	65.00	65.00/	75.00	50.00/	—
No. 1 Mixed Ledger	30.00/	35.00	25.00/	30.00	37.50/	—	30.00/	—
White Ledger	45.00/	55.00	35.00/	45.00	45.00/	50.00	40.00/	—
Mixed Books & Mags.	7.00/	8.00	4.00/	5.00	12.00/	—	7.00/	—
No. 1 Rep'd Hvy. Books & Mags.	20.00/	25.00	8.00/	10.00	22.00/	23.00	20.00/	—

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)

Coarse Polished—India	.35½/ .36½
Fine Polished India	.41½/ .45
Unpolished—Paper Makers	.32¼/ .34½
Tube Rope	.33¼/ .35½
Wrapping	.36 / .38¼
Cotton	.58 / .60
Polished Cotton	.55 / —
(Hard Fiber)	
Mex. Sisal	.21 / .23
(American Hemp)	
Polished Hemp	.45 / .48
Unpolished	.35 / .37½

Rag Market

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.	
White Shirt	$10.00/	$10.50
Unbleached Muslin	10.00/	10.50
Light Silesias	7.00/	7.50
White Back Blue Overalls	6.25/	6.50
Blue Overalls	6.00/	6.25
Fancy Shirt	4.50/	5.00
Percales	5.50/	6.00
Light Prints	5.50/	6.00
No. 1 Washables	2.75/	3.00
Bleachable Khaki	5.00/	5.50
Unbleachable Khaki	4.50/	5.00
Cottonades	4.25/	4.75
Lt. Flannelettes	7.00/	7.50
Men's Corduroy	3.50/	4.00
Women's Corduroy	3.00/	3.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.	
No. 1 Whites, Repacked	$4.25/	$4.75
No. 1 Whites, Miscellaneous	3.50/	4.00
No. 2 Whites, Repacked	2.75/	3.00

No. 2 Whites, Miscellaneous	2.00/	2.25
Cotton Pants & Overalls	2.50/	2.75
Thirds and Blues, Repacked	2.00/	2.25
No. 1 Roofing Rags	1.25/	1.35
No. 2 Roofing Rags	1.00/	1.20
No. 3 Jute Bagging	**.95/**	**1.05**
No. 4 Brussels & hrd. Bck'd crpts.	**.90/**	**1.00**
Roofing Bagging	**.80/**	**.95**

New Foreign Cotton Cuttings

(Prices to Dealer, f.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	
New Mixed Cuttings	
Light Silesias	prices
Light Flannelettes	
New White Cuttings	are
New Unbleached Cuttings	
Fancy Shirt Cuttings	nominal
Light Prints	
Bleachable Khaki, No. 1	
Unbl. Khaki, No. 1	

Old Foreign Rags

(Prices to Dealer, f.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	
No. 2 White Cottons	
No. 3 White Cottons	
No. 4 White Cottons	prices
Extra Light Prints	
Old Light Prints	
Med. Light Prints	are
Dutch Blue Cottons	
Checks and Blues	
Linsey Garments	nominal
Dark Cottons, European	
Dark Cottons, Egyptian	
Old Shopperies	
New Shopperies	

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny, No. 1	**$7.50/ $8.00**
Domestic Gunny, No. 1	7.50/ 8.00
Heavy Wool Tares	6.50/ 7.00
No. 1 Scrap Bagging	**4.75/ 5.00**
Foreign Manila Rope	**5.50/ 5.75**
Domestic Manila Rope	**5.50/ 5.75**
Jute Strings	**6.25/ 6.50**
No. 1 Sisal Strings	5.00/ 5.25
Mixed Strings	**1.15/ 1.30**

PHILADELPHIA

Domestic Rags (new)

(F.o.b. Eastern Shipping Point)

	Per 100 lbs.
White Shirt	**$10.25/$10.50**
Fancy Shirts	5.00/ 5.25
Light Silesias	**6.75/ 7.00**
Unbleached Muslin	**10.00/ 10.25**
Light Prints	**5.25/ 5.50**
Washable No. 1	2.75/ 3.25
Blue Overall	**6.00/ 6.25**
Percales	**5.50/ 5.75**
Unbleachable Khaki	3.50/ 4.00
Bleachable Khaki	4.50/ 5.00
Men's Corduroy	3.75/ 4.25
Ladies' Corduroy	3.25/ 3.75
Cottonades	3.75/ 4.00

Domestic Rags (old)

(F.o.b. Eastern Shipping Point)

	Per 100 lbs.
Mixed White	$3.00/ $3.50
Thirds and Blues Repacked	2.25/ 2.50
Cotton Pants & Overalls	2.25/ 2.50
No. 1 Roofing Stock	1.00/ 1.10
No. 2 Roofing Stock	.90/ 1.00
Roofing Bagging	.80/ .90

Bagging

(F.o.b. Eastern Shipping Point)

	Per 100 lbs.
Old Manila Rope	$5.00/ —
Foreign Gunny No. 1	7.50/ 8.00
Domestic Gunny No. 1	7.50/ 8.00
Sisal Strings No. 1	3.00/ 3.50
No. 1 Scrap	4.00/ 4.50
No. 1 Jute Rope	5.50/ 6.00

BOSTON

Bagging

(F.o.b. Boston)

	Per 100 lbs.
Foreign Gunny	$7.00 /$7.50
Domestic Gunny	7.00 / 7.50
Domestic No. 1 Old Rope	6.00 / 6.25
Foreign No. 1 Old Rope	**6.50 / —**
Mixed Strings	1.35 / —
Transmission Rope—Domestic	**3.00 / 3.50**
Jute Carpet Threads	**— / 4.00**
Bleachery Burlap	**— / 9.00**
Scrap Burlap—	
Foreign	5.75 / 6.00
Domestic	5.75 / 6.25
South America	6.00 / 6.50
Austr. Wool Pouches	8.25 / 8.75
New Zealand Wool Pouches	**— / 6.00**
New Burlap Cuttings	**7.50 / 8.00**
Heavy Baling Bagging	**7.50 / 8.00**
Paper Mill Bagging	**— / 5.00**

Domestic Rags (new)

(F.o.b. Boston)

	Per 100 lbs.
New Light Prints	5.75 / 6.00
Fancy Percales	6.25 / 6.50
White No. 1 Shirt	10.00 /10.75
Light Flannelettes	**— / 7.00**
Canton Flannels, Bleached	**— / 9.00**
Underwear Cutters, Bleached	10.75 /11.25
Underwear Cutters, Unbleached	10.00 /10.25
Blue Overalls	6.00 / 6.50
Soft Unbleached	9.75 /10.50
Blue Cheviots	6.00 / 6.50
Fancy Shirt	4.00 / 4.50
Washable	3.00 / 3.25
Khaki Cuttings	5.00 / 5.25
Men's Corduroy	4.50 / 5.00
Khaki Canvas	— / 6.50
B. V. D. Cuttings	10.00 /10.25

Domestic Rags (old)

(F.o.b. Boston)

	Per 100 lbs.
No. 1 Whites, Repacked	3.00 / 3.50
No. 1 Whites, Miscellaneous	2.50 / 3.00
Twos and Blues, Repacked	— / 2.00
Cotton Pants & Overalls	2.50 / 2.75
No. 1 Roofing Stock	.95 / 1.10
No. 2 Roofing Stock	.85 / 1.00
Roofing Bagging	.75 / .80

MATERIALS

Blanc Fixe

Prices firm. Demand moderate. Supply adequate. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Prices steady. Demand easy. Prices range from $4.25 to $4.75 per 100 pound drums, l.c.l., works.

Casein

Currency devaluation cuts Argentine price. Undertone of market weak as dull trading and heavy stocks face new season. U. S. production low. Current prices on processed acid precipitated grades 20½ to 21 cents, premium grades 21½ to 22 cents; imported grades 17¾/19 cents, f.o.b. shipping point, car lots.

Caustic Soda

Stocks ample for prompt shipment. Prices firm. L.c.l. sales reported at competitive levels. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 per cent in tank cars at $2.50 per cwt., at works.

China Clay

Prices firm. Demand easier, supply of domestic and imported ample. Domestic filler quoted at $10 to $12.50 per ton, car lots, f.o.b. mines. Coating clay is $15 to $25. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine

Demand strong. Supply condition tightened by seasonal water requirements. Prices firm. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

Rosin

Market tone brighter. Prices firm. German buying approved. Gum rosin in drums per 100 pounds net in car lots, f.o.b. Savannah, B, $5.75; G, $6.42; H, I, K, $6.44; wood rosin, per 100 lbs., car lots f.o.b. Savannah; B, $4.25; FF, $5.50.

Rosin Size

Supply good. Demand steady. Seventy percent gum and pale wood grades, tank cars, $5.45 to $5.55 f.o.b. southern shipping point.

Salt Cake

Demand fair. Domestic quoted at $22.00/$24.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

Market unchanged. In free supply. Demand easier. Prices firm. Current prices, car lots per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Starch, Corn

Prices steady at levels of Aug. 15 until Sept. 1. Demand moderate. Supply ample. Pearl grade currently quoted at $4.82 per 100 pounds; powdered starch at $4.93 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Strong paper demand. Supply tight. Market firm. Prices stronger. Idaho quantities limited to warehouse. High grade quoted at $7.00 cwt., l.c.l., ex N. Y. whse. Maine supply quoted $4.75/$4.88, f.o.b. Maine warehouse.

Sulphate of Alumina

Prices firm Supply good. Demand steady. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur

Supply ample. Demand sustained at good level. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Prices steady. Demand continues ahead of supply. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in car lots.

Tapioca Flour

Supply good. Moderate demand. Superior high range from $9.50/$10.00 cwt.; high grades $8.60/$9.50 cwt., on dock Atlantic and Gulf ports; medium grades range from $7.25/$8.00 cwt. on dock, N. Y.

Titanium Dioxide

Prices firm. Supply reported now in balance with eased demand. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

Kaolin Usage Growing

WASHINGTON — New records were made in industrial clay mining in 1948, including clay used in paper manufactured, the Bureau of Mines reports.

Clay used by the paper industry for filler in that year included 472,360 short tons of kaolin; 400 tons of ball clay; and for coating, 399,768 short tons of kaolin.

Domestic clay sold or used by producers included 1,568,848 short tons of kaolin, compared with 1,425,106 short tons in 1947. Kaolin imports in 1948 rose to 99,930 short tons from 82,628 in 1947. Exported were 19,074 short tons of kaolin compared with 18,686 in 1947.

Dextrine Prices Cut

NEW YORK — Reductions in costs of corn and tapioca are being passed along to buyers of dextrine products, a major producer states.

Prices of all dextrine products made from tapioca flour, excepting specialties, were reduced 75 cents per 100 lbs. on August 17; cook-up dextrines made from blends of corn and tapioca were cut 25 cents; cold-water solubles, Section I, tapioca, 75 cents; Section II, blends, 50 cents; envelope back gums, Section I, Baktak, 85 cents; Section II, acid gums, 25 cents.

UNDERWRITERS
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FINANCIAL RECORD •

	Per Share Earnings		Indic.	Aug. 23
PREFERRED STOCKS	Calendar Year 1948	12 Mo. to Approx. 6/30/49	Annual Divid. Rate	Approx. Market Price
Armstrong Cork Co. $3.75 Cum.	$46.33*	n.a.	$3.75	99⅝
Armstrong Cork Co. $4.00 Cum. Conv.	46.33*	n.a.	4.00	110
Celotex Corp. 5% Cum.	26.42c	$15.31i	1.00	16⅜
Champion Paper & Fibre $4.50 Cum.	**61.80j**	**99.97f**	**4.50**	96¾
Container Corp. of Amer. 4% Cum.	105.41	99.87	4.00	99½
Crown Zellerbach $4.20 Cum.	59.10c	61.84i	4.20	100⅜
Crown Zellerbach $4.00 Cum. Conv. 2nd	55.88c*	58.59i*	4.00	93
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.10	10.04	2.50	49¾
Flintkote Co. $4 Cum.	83.25	66.07	4.00	103¼
Robert Gair Co., Inc. 6% Cum.	17.08	13.73	1.20	16⅞
International Paper Co. $4 Cum.	263.00	265.18a	4.00	104⅛
Johns-Manville $3.50 Cum.	209.89	212.03	3.50	108¼
Kimberly Clark Corp. 4½% Cum.	80.74	74.36	4.50	102
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.59*	44.25*	4.00	101½
MacAndrews & Forbes 6% Cum.	62.23	58.66	6.00	134¼
Mead Corp. 4¼% Cum.	73.46	68.78k	4.25	93
Mead Corp. 4% Cum. Conv. 2nd	29.91*	24.30k	2.00	33
Paraffine Cos. Inc. 4% Cum. Conv.	156.11	158.51a	4.00	103
Rayonier Inc. $2 Cum.	16.43	13.99	2.00	31¾
St. Regis Paper Co. 4.40% 1st A	79.90	51.11	4.40	81⅜
Scott Paper Co. $3.40 Cum.	59.06	55.14*	3.40	95¼
U. S. Gypsum Co. 7% Cum.	314.45	296.82	7.00	183
United Wallpaper Inc. 4% Cum. Conv.	(d)0.79	15.44a	2.00	24¼
West Virginia Pulp & Paper 4½% Cum.	79.45c	69.93p	4.50	107½
COMMON STOCKS				
APW Products Co.	$0.73	(d)$0.56	(m)	2⅞
American Writing Paper Corp.	(d)0.15	(d)0.16	$0.25	5⅞
Armstrong Cork Co.	7.54	n.a.	3.00	47⅛
Celotex Corp.	**7.21c**	**4.06i**	**1.00**	15¾
Certain-Teed Prods. Corp.	4.02	3.21	1.00	11⅞
Champion Paper & Fibre	5.34j	8.70f	2.00	23¾
Congoleum Nairn Co.	5.78	4.92	2.25	27¼
Container Corp. of America	10.12	9.52	4.50	34½
Crown Zellerbach	6.70e	6.85i	2.00	25¾
Dixie Cup Co.	6.70	6.65	1.00	28⅞
Eastern Corp.	4.76	1.27	(h)	8⅞
Flintkote Co.	5.86	4.40	2.50	26⅜
Robert Gair Co., Inc.	2.67	2.10	0.70	6⅛
Great Northern Paper Co.	4.63	5.32	2.80	38⅝
International Paper Co.	16.73	16.87a	5.00	52½
Johns-Manville Corp.	5.22	5.27	2.00	39¾
Kimberly Clark Corp.	5.02	4.55	1.65	22
MacAndrews & Forbes Co.	3.68	3.56	2.50	34
Marathon Corp.	**4.11c**	**3.76i**	**1.40**	19⅞
Mead Corp.	6.36	5.84k	1.00	12⅜
National Container Corp.	2.28	1.80a	0.40	6½
Paraffine Cos. Inc.	2.45	2.49a	1.20	18½
Rayonier, Inc.	9.09	7.55	2.00	24⅞
Ruberoid Co.	11.80	9.48	3.25	49½
St. Regis Paper Co.	2.71	1.64	0.60	6⅜
Scott Paper Co.	4.15	5.02	2.50	58¼
Sutherland Paper Co.	6.02	4.92	2.50	33⅜
Union Bag & Paper Corp.	9.17	6.50	3.50	24¼
United Board & Carton	2.04b	(d)0.35i	(e)	5¾
U. S. Gypsum Co.	15.04	14.18	6.00	95½
United Wallpaper	(d)0.10	0.42a	(n)	3¾
West Virginia Pulp & Paper	11.33c	9.70p	4.00	40⅛

(a) 12 months to approximately 3/31/49
(b) Year ended 11/23/48
(c) Year ended 10/31/48
(d) Deficit
(e) Omitted dividend 2/4/49
(f) 11 months to 3/31/49
(g) 12 months to approximately 1/31/49
(h) Directors took no action on 8/2/49 dividend—last payment 5/2/49
(i) 12 months to approximately 4/30/49
(j) 8 months to 12/31/48
(k) 12 months to approximately 6/12/49
(m) Directors took no action on July, 1949, dividend—last payment 1/10/49
(n) Last payment 25c, 9/16/47
n.a. Not available
(p) 12 months to approximately 7/31/49
(*) Earnings per combined preferred shares.

Dividends Declared

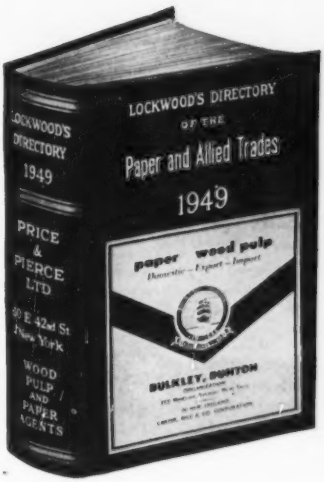
Canadian International Paper Co., has declared a regular quarterly dividend of $1 per share on its common U. S. funds September 29 to holders of and preferred stocks, both payable in record September 2.

Donnacona Paper Co., Ltd., has declared a dividend of 50 cents per share, payable October 1 to holders of record September 1.

Barber-Ellis of Canada Ltd. has declared a dividend of 25 cents per share, plus an extra of 25 cents, payable September 15 to holders of record August 31.

Central Paper Co., has declared a dividend of 15 cents per share for the quarter ending September 30 payable the same date to holders of record September 20.

1949 EDITION



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Paper and Printing, Cash Dividends

WASHINGTON. — Publicly reported cash dividends by United States corporations in the paper and printing fields aggregated $17,400,000 in June, 1949, against $18,800,000 a year earlier, the Department of Commerce reports. The payments were not segregated by industries.

Gaylord Container Corp. has declared a dividend of 37½c a share on its common stock, payable September 10, to holders of record September 1.

U. S. Envelope Co. has declared a dividend of $1.25 per share on its common stock, and $3.50 per share on its preferred, payable September 1 to holders of record August 22.

Ten-Year Consolidated Study

A brief study of Consolidated Paper Corp., Ltd., has been issued by MacDougall & MacDougall, members of the Montreal Stock Exchange and Curb Market, with this study pointing out that in the ten-year period ended last December, working capital increased $28.2 million, while funded debt was reduced $24.3 million or a total improvement of over $52 million, equivalent to $20 per share.

Canadian Security Prices

OTTAWA.—The security prices of common stocks of pulp and paper mills in Canada dropped to 210.6 in June this year compared with 227.4 in May, a decline of 16.8 points, with the principal price changes between May and June involving decreases for Great Lakes Paper Co., Ltd., St. Lawrence Corp., and Dryden Paper Co., Ltd. These indexes are based on 1935-39 being 100.

IMPORTS

IMPORTS AT NEW YORK

Week Ending August 20

Newsprint

Montmorency Paper Co., Gudvor, Botwood, 1248 rolls, 1269 rolls (Alexandria, Va.).
Madden Reeve Angel & Co., Inc., Oklahoma, Kotka, 838 rolls.
Wall Street Journal, Fort Avalon, Cornerbrook, 115 rolls.
N. Y. Times Co., Fort Avalon, Cornerbrook, 583 rolls.
N. Y. World Telegram, Fort Avalon, Cornerbrook, 1127 rolls.
N. Y. Sun, Fort Avalon, Cornerbrook, 183 rolls.
Madden Reeve Angel & Co., Inc., Mormacwave, Kotka, 1069 rolls.
N. Y. Journal American, Markland, Liverpool, N.S., 377 rolls.
N. Y. Herald Tribune, Markland, Liverpool, N.S., 1769 rolls.
N. Y. World Telegram, Markland, Liverpool, N.S., 698 rolls.
Brooklyn Eagle, Markland, Liverpool, N.S., 714 rolls.
Brooklyn Eagle Press, Markland, Liverpool, N.S., 57 rolls.
Washington Post, (Alexandria, Va.), Markland, Liverpool, N.S., 2619 rolls.
Gazette, (Alexandria, Va.), Markland, Liverpool, N.S., 38 rolls.
H. C. Craig Co., Kermic, Donnacona, 331 rolls.
News Syndicate Co., Colalee, Baie Comeau, 7469 rolls.
H. C. Craig Co., Newscarrier, Donnacona, 369 rolls.
R. A. Olsen, G.T.D., Donnacona, 358 rolls.
News Syndicate Co., Ethel Tombs, Gatineau, 320 rolls.
H. C. Craig Co., G.D.D., Donnacona, 371 rolls.
News Syndicate Co., Mimi, Thorold, 1639 rolls.

Parchment

Intermaritime Forwarding Co., Queen Mary, Southampton, 2 cs.

Colored Paper

J. W. Hampton Jr. & Co., Alwaki, Antwerp, 3 cs.

Wrapping Paper

Jay Madden Corp., Mormacwave, Helsingfors, 50 bls., 170 rolls.

Photo Paper

American Express Co., American Producer, London, 95 drums (base).

Printing Paper

Stevens Nelson Paper Corp., American Producer, London, 3 cs.
S. H. Pomerance Co., American Producer, London, 1 cs.

Drawing Paper

Winsor Newton Inc., American Producer, London, 5 cs.
D. Hauser, America, Southampton, 6 cs.

Envelopes

Cartier Inc., American Producer, London, 1 cs.

Wallpaper

Hudson Shipping Co., America, Southampton, 3 cs.

Tracing Cloth

E. Dietzgen & Co., Media, Liverpool, 15 cs. (bleached cotton).

Filter Paper

Stevens Nelson Paper Corp., Marine Shark, Southampton, 1 cs.

Miscellaneous Paper

Hensel Bruckman & Lorbacher, Valacia, London, 1 cs.
M. J. Corbett & Co., Blydendyk, Rotterdam, 9 cs.

Rags, Baggings, etc.

Royal Manufacturing Co., John B. Waterman, Antwerp, 55 bls. cotton waste.
Railway Supply & Manufacturing Co., Granadero, Bombay, 125 bls. cotton waste.
Brandwein Mazur Co., Granadero, Bombay, 200 bls. cotton waste.
A. de Vries Trading Corp., Alwaki, Antwerp, 22 bls. old bagging.
Star Woolen Co., Agwimonte, Tampico, 5 bls. rags.
New England Waste Co., Lancero, Rio de Janeiro, bls. cotton waste.
American Express Co., Valacia, London, 32 bls. paperstock.
New England Waste Co., Lancero, Rio de Janeiro, 55 bls. old bagging.
Chase National Bank, Media, Liverpool, 30 bls. rags.
(———), Media, Liverpool, 63 bls. rags, 4 bls. threadwaste.
National City Bank, Khedive Ismail, Alexandria, 79 bls. scrap bagging.
Cowa Trading Co., Khedive Ismail, Genoa, 122 bls. cotton waste.
(———), Flying Cloud, Alexandria, 97 bls. bagging.
Castle & Overton, Inc., Mormacowl, Santos, 18 bls. wool rags.

Casein

Canadian Bank of Commerce, Green Bay Victory, Sydney, 240 bags (rennet).
The Borden Co., Washington, Havre, 250 bags.

Woodpulp

Cellulose Sales Co., Oklahoma, Kotka, 1 cs. (samples).
Delaware Pulp Co., Sheet Harbor, Nova Scotia, 12,347 bls.

Woodpulp Boards

Jay Madden Corp., Oklahoma, Kotka, 458 rolls (solid white).
Jay Madden Corp., Mormacwave, Kotka, 663 bls., 59 rolls.

IMPORTS AT NEWARK

Week Ending Aug. 20

Pulp Sales Corp., Oklahoma, Kotka, 1825 bls. prime unbleached sulphate pulp.
Cellulose Sales Co., Oklahoma, Stugsund, 1000 bls. airdry sulphite pulp.
Pagel Horton & Co., Inc., Oklahoma, Gefle, 1270 bls. woodpulp, 400 bls. dry sulphite pulp.
Stora Kopparberg Corp., Oklahoma, Skutskar, 870 bls. dry woodpulp.
Cellulose Sales Co., Oklahoma, Ostrand, 1200 bls. kraft sulphate pulp, 480 bls. sulphite pulp.

IMPORTS AT PHILADELPHIA

Week Ending Aug. 20

Pulp Sales Corp., Oklahoma, Kotka, 520 bls. prime unbleached sulphate pulp, 180 bls. prime unbleached sulphite pulp.
Madden Reeve Angel & Co., Inc., Oklahoma, Kotka, 141 rolls newsprint.
Jay Madden Corp., Oklahoma, Kotka, 190 rolls wrapping paper.
Pagel Horton & Co., Inc., Oklahoma, Gefle, 680 bls. woodpulp, 3000 bls. dry sulphite pulp.
J. A. McCarthy, Oklahoma, Gefle, 1 bl. wallboard.
Cellulose Sales Co., Oklahoma, Ostrand, 250 bls. dry sulphite, 150 bls. sulphite pulp.
Castle & Overton, Inc., Oklahoma, Gothenburg, 762 bls. dry sulphite pulp.
Jay Madden Corp., Mormacwave, Helsingfors, 20 rolls wrapping paper.
Madden Reeve Angel & Co., Inc., Mormacwave, Kotka, 1948 rolls wrapping paper.

IMPORTS AT BALTIMORE

Week Ending Aug. 20

J. S. O'Connor, American Producer, London, 1 cs. printing paper.
Madden Reeve Angel & Co., Inc., Mormacwave, Kotka, 135 rolls newsprint.

IMPORTS AT NORFOLK

Week Ending Aug. 20

State Street Trust Co., Exford, Venice, 120 bls. old jute bagging, 62 bls. old bagging.
Security National Bank, (Raleigh), Blydendyk, Rotterdam, 115 rolls newsprint.

AWARDS

Army

N. Y. Army Purchasing Office

QM-30-280-50-1—covering, CUP, Drinking, Paper, Flat, to:

Boston Drinking Cup Co., Dedham, Mass., 536,000 pkg. @ $.09 pkg. This procurement is for the U. S. Army.

QM-30-280-50-2, covering Barrier Material and Tape, Paper, gummed, to:

Paper Div. Leeds Sales Co., New York, N. Y., Barrier Material, Waterproof, 72" wide, 100 rolls @ $14.50.

Mid-West Wax Paper Co., Fort Madison, Iowa, Barrier Material, Greaseproof, 36" wide, 3,000 rolls @ $17.49.

The Gummed Products Co., Troy, Ohio, Tape, Paper, Kraft, Gummed, 5,000 rolls @ $.4109.

Directive quantity: Barrier, Material, 72", 100 rolls; Barrier, Material, 36", 3,000 rolls; Tape, Paper, Kraft, 5,000 rolls. This procurement is for the U. S. Army (Ord.).

Navy

N. Y. Navy Purchasing Office

Inv. No. 4137—Paper, Bond, 12,900 rms., to Walker-Goulard-Plehn Co., Inc., NYC, @ $1.939 to $4.68 per rm.

Inv. No. 5261—Teletype Paper, sulphite, bond, 7,000 pkgs., to The Standard Register Co., Dayton, Ohio, @ $8.46 per pkg.

Inv. No.—5283—Paper, Stencil, Dry Process, blue waxless—129,000 quires, to:

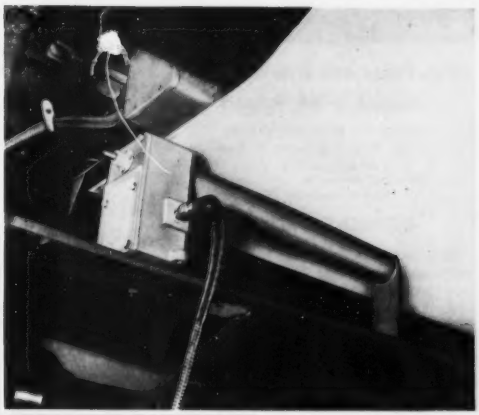
Marr Duplicator Co., New York City—89,700 quire @ $.87 qu. 1% 10 days.

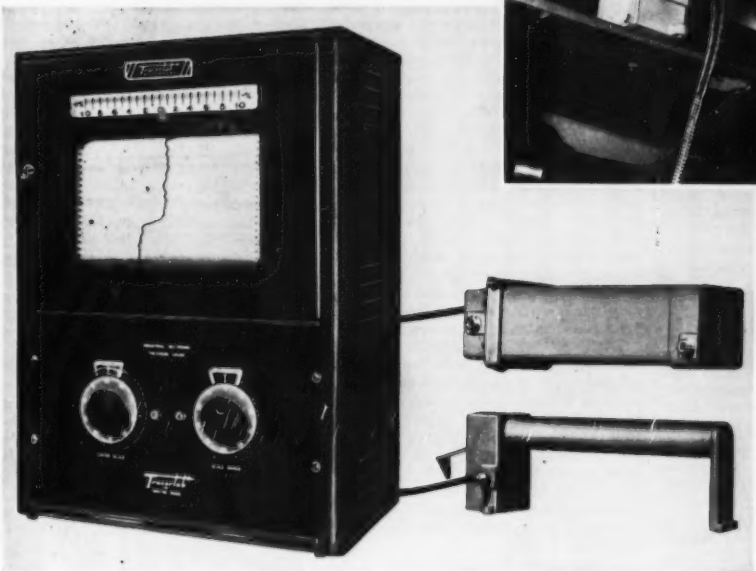
A. B. Dick Co., Chicago, Ill.—29,700 qu. @ $.90 qu.

Note: Remaining purchases—small amounts.

CUT COSTS

BY IMPROVING BASIS WEIGHT CONTROL





A Tracerlab Beta Gauge installation for measuring paper board at Continental Paper Co., Ridgefield Park, New Jersey.

SHORTEN STARTUP TIME · IMPROVE QUALITY CONTROL · SAVE PULP STOCK
ELIMINATE OFF-WEIGHT REJECTS · DECREASE VARIATIONS ACROSS SHEET

WITH THE NEW TRACERLAB BETA GAUGE

The Tracerlab Beta Gauge is a completely new and unique instrument for measuring and recording weight per unit area or thickness of various materials directly on the production line. It uses beta radiation from Oak Ridge produced radioisotopes to achieve a high degree of accuracy and sensitivity and is unaffected by variations in chemical composition of the material being measured. This is a non-contacting type of gauge designed for the severe operating conditions usually encountered in production operations. In addition to the recording type, a non-recording industrial model and a laboratory model of the Tracerlab Beta Gauge are also available.

Let us know your gauging problems and we will gladly advise you how the Tracerlab Beta Gauge can help you.

Write for Beta Gauge Bulletin P-20

A FEW TYPICAL USES

Measuring weight per unit area or thickness of the following:

PLASTIC COATED PAPER
PAPER BOX BOARD
TISSUE PAPER
STATIONERY
PAPER BUILDING BOARD
LEDGER PAPER
CONDENSER PAPER
WAXED PAPER
PARCHMENT
FACIAL TISSUE
ASPHALT COATED PAPER
CARBON PAPER
KRAFT
GLASSINE PAPER

Tracerlab

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New York Office
General Motors Building, 1775 Broadway, New York 19
Midwest Office
LaSalle-Wacker Bldg., 221 N. LaSalle St., Chicago, Ill.

TRACERLAB INC., 130 HIGH STREET, BOSTON 10, MASS.

MARKETS • • • • •

Pulp, Paper and Board Industry August, 1949, Report

By W. LE ROY NEUBRECH
Chief, Pulp and Paper Section
U. S. Dep't., of Commerce
Office of Domestic Commerce,
Forest Products Div.

ECONOMIC REVIEW

Major economic and commercial problems in the pulp and paper industry vary considerably from period to period. Every business executive keeps a bird's eye view of the entire scope of activities in each stage of operation, and as conditions change emphasis has to be placed upon the segment where the principal difficulty appears to be.

In the field of pulp and paper, from the end of the war until late in 1948, the preponderant problem centered in the field of manufacturing, particularly the difficulty in obtaining adequate supplies of raw materials such as wood pulp, certain chemicals, machinery and electrical equipment, and to a degree, skilled labor. During that time markets existed greatly in excess of available supplies of practically all items and mills were forced to allocate their products to individual buyers.

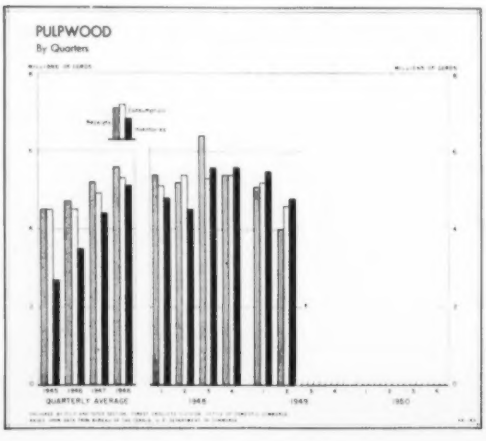
Within the last six to nine months, however, the situation has completely reversed itself. Abundant raw materials and essential operating equipment have become available but markets have failed to absorb a volume of finished output equal to 1948. Demand during the first six months of 1949 has been far below the capacity and ability to produce at the manufacturing level. In the previous three or four issues of this *"Pulp, Paper and Board Industry Report,"* considerable facts and analysis have been set forth covering some underlying apparent causes and results of this situation.

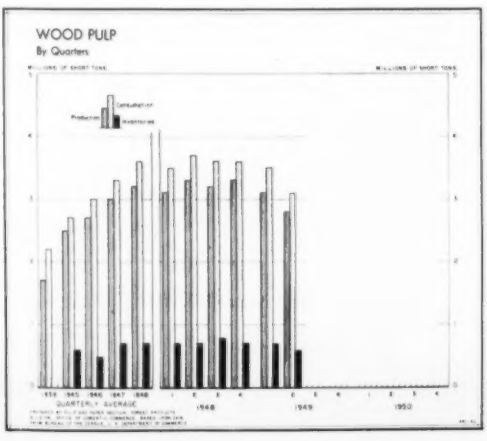
In order to fully appraise the current and prospective market for any product, it is essential to analyze the situation at the public buying level. Unlike most other commodities, paper and board, for the most part, ultimately consumed by the masses, are not "purchased" by the public. The population purchases food, clothing, tobacco, radios, automobiles and hundreds of household articles because it desires and needs those products. It does not objectively buy the paper or board in which such items are shipped or packaged, although admittedly sales of such commodities are enhanced by attractive packaging. It buys magazines and books because it wants to read them. It does not purchase the printed material to get the paper. There are, however, some exceptions where the public buys paper for use of such, primarily in the form of toilet tissue, paper towels, paper napkins, facial tissue, tablets, envelopes and stationery. There are some other items, too, such as paper draperies, paper auto seat covers, twisted paper rugs, games, wallpaper, etc. But all together such products represent only about five or six percent of aggregate paper and board tonnage consumption in the United States. As a consequence, to measure and appraise the end market and end consumption of paper and board, it is necessary to study the trends of the various items utilizing paper. The field of nondurable goods, which includes food, textile products, tobacco products and printing and publishing has long been accepted as a reliable basic indicator. But to get the ultimate level of consumption, it is necessary to go to the retail level rather than the manufacturing level.

A most pertinent observation is apparent from retail sales data by class of store. In the prewar year, 1939, retail sales by nondurable goods stores accounted for 75.3 percent of total retail sales. When durables became scarce during the war and immediately following the war, nondurable goods stores accounted for as much as 80.2 percent of total retail sales. This situation created even greater pressure on the then limited supply of paper and board available. The trends in retail nondurable goods stores, relative to total retail sales, has been almost steadily downward since 1946, reaching a low point of 69.6 percent of the total in June this year. In viewing the level of paper and board consumption compared to prewar standards of comparison with total consumer expenditures, this must be taken into account. There was a brief period, in the fourth quarter of 1948 and the first quarter of 1949 when it appeared that the ratio of nondurable goods to total retail sales was showing signs of moving back toward the prewar relationship, but in April, May and June it went downward again. Perhaps there has been a permanent change in consumer expenditures as between durables and nondurables, but it will be some time yet before supply, demand, and prices adjust themselves on all commodities, one relative to another, so that the postwar pattern can be determined.

Had retail sales of nondurables returned closer to the prewar relationship to total retail sales during the first six months of 1949, then the ultimate consumption of paper, board and its products probably would have been at a higher level, for it is most noteworthy that personal consumption expenditures for all goods and services for the nation as a whole have declined very little this year from the peak fourth quarter of 1948. The accompanying table discloses that total personal consumption expenditures in the second quarter of 1949 were only one and one-half percent below the peak 1948 fourth quarter and were only 0.3 percent below the average for the year 1948. On the other hand, it is indicated that personal consumption expenditures for nondurable goods had declined 4.5 percent in the second quarter of this year below the last quarter of 1948 and were 3.5 percent below the average for the entire year 1948.

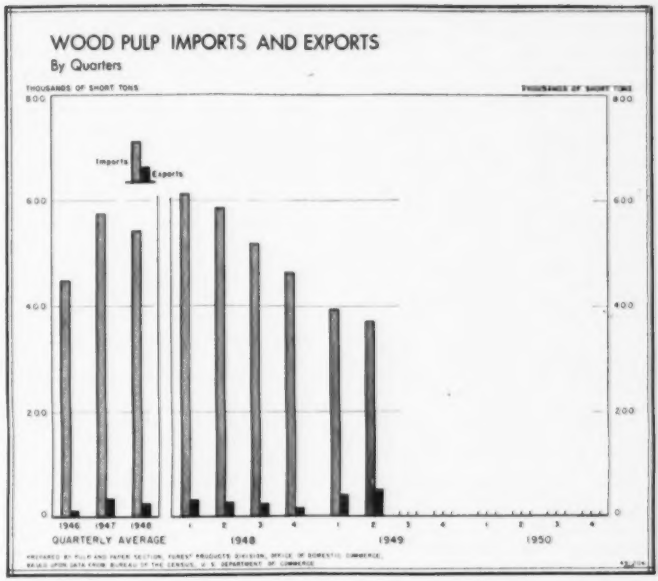
A fundamental economic keynote giving some degree of optimism with re-





gard to the nation's business potentialities as a whole has been not alone the maintenance of personal consumption expenditures but also the stability of the nation's aggregate personal income. The following table shows very forcibly that personal income during April, May, and June of this year has been sustained at a very high level and only slightly below the peak quarter of 1948, yet moderately higher than the average for the entire year, 1948.

When these important statistical barometers are viewed relative to known facts at the manufacturing level in the pulp and paper industry, they seem to point quite definitely toward a conclusion that ultimate final consumption of paper, board and its products by the population has not diminished materially from a year ago but that inventory pipe lines have been reduced substantially during the past year or so at probably all levels of distribution, including converting operations.



RAW MATERIALS[1]

Pulpwood

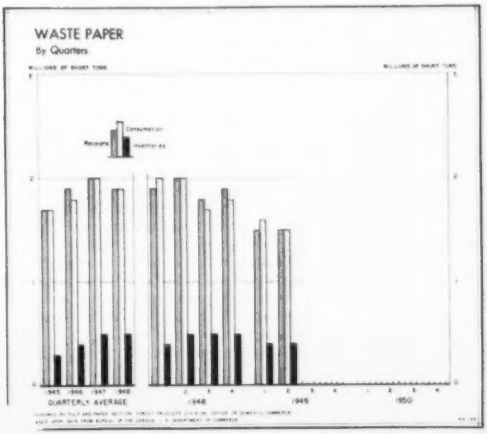
Logging activities controlled or influenced by pulp mills continue to be severely curtailed in some sections of the country, according to August 1 reports of Department of Commerce representatives in the field. In the Pacific Northwest, particularly, the influence of large mill stocks of wood and a reduction of pulping operations have had the effect of retarding pulpwood production. Buyers in the area are becoming increasingly selective due largely to the variation between prices in different sections of the northwest region. The general decline in woods activity has sharply affected employment with mills in the Puget Sound district reporting the number of their logging personnel as from 15 percent to 60 percent of that in 1948.

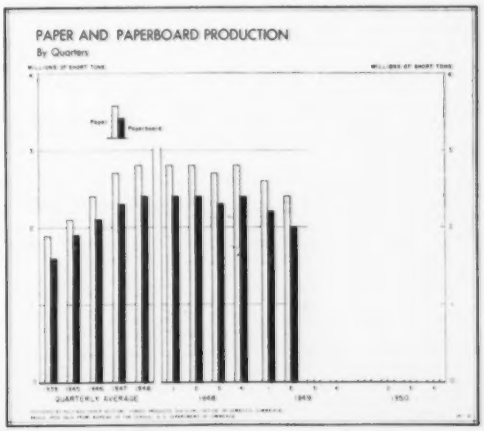
Log inventories of pulping species in the Puget Sound area on July 1, 1949, were nearly 278.7 million feet log scale or almost 100 percent above the same date a year ago. Inventories rose more than 15 percent during June. In the Grays Harbor district, July 1 stocks of pulping species logs totaled about 36 million feet log scale, an increase of 13 percent over July 1, 1948, on which date inventories were at a subnormal level owing to the effects of the boommen's strike. Only a slight gain occurred in these stocks during June. Log imports into the Puget Sound district from British Columbia during June, 1949, amounted to almost four million board feet, of which 61 percent was Douglas fir and 34 percent hemlock.

Elsewhere in the Pacific Northwest, along the Columbia and Willamette rivers, the log market is reportedly weak with many grades down as much as $30 per thousand feet below prices of a year ago. Hemlock logs, a favorite species of the pulp industry, are reportedly available at $25 per thousand feet, with only a few sales being consummated. Log inventories of pulp and paper mills along the two rivers rose about 10 percent during June, boosting total stocks to 170.7 million feet log scale, or approximately 27 million feet above stocks on July 1, 1948. Hemlock comprised about 69 percent of the inventories held by pulp and paper mills, and some 85 percent of the 115.8 million feet in the hands of market loggers on July 1.

An exceptional stretch of warm summer weather with subnormal rainfall has created a serious forest fire hazard in some portions of the Pacific North-

[1] Section on Raw Materials prepared by Walter J. Myers.





west with early August press reports indicating that fires of undetermined extent have broken out.

In the vicinity of the Great Lakes, pulpwood is still being withdrawn from stock piles of mills some of which have their storage yards filled to capacity. Some mills, in fact, report their inventories to be as high, or higher, than at any time during the past several years. Relatively small purchases are being made from farm wood lots and on outstanding contracts. Several mills in the Lakes area show disinclination to execute any long term contracts in view of their expectation of still lower wood prices. Others feel that it is premature at this time to attempt a forecast of the fall buying program and the prices which may prevail at that time. Labor in the Lakes region is reportedly in surplus. Despite this condition, some labor groups have evinced an interest in beginning discussions looking toward further wage adjustments.

While other regional conditions in respect to pulpwood have not been covered by special reports, official data for the month of June indicate that mill receipts have increased or held their own, relatively, during the month while consumption of wood was on virtually the same level as in May. Sizable inventory withdrawals during June characterized the pulpwood supply position in the Lake States and, to a lesser degree, in the Northeast; in the Northwest, a substantial upswing in wood stocks contributed, in large measure, to maintaining the level of countrywide inventories in the aggregate. The consensus of pulpwood prices anticipates no substantial change, in general, until the resumption of large scale cutting later in the year.

Mill receipts of imported pulpwood —from Canada—during the first two quarters of 1949 registered a greater proportionate decline, compared with the same period of 1948, than did receipts of domestic wood. Imports for the January-June period totaled 865,000 cords. The Canadian preliminary quota for 1949 export to the United States called for 1,350,000 cords which will no doubt be supplemented by an additional quantity, as in 1948. The Canadian authorities have also affected for the present year, an ex-quota authorization of approximately 100,000 cords of fire-killed wood originating in the Western provinces. According to recent reports, the 1949 spring logging drive in Canada was some 17 percent less, from a standpoint of the number of men engaged, than that of 1948. This slackening of activity reflects, chiefly, the restoration of mill inventories in Canada from the unsatisfactorily low levels of a few years ago. An interesting development, outlined in a recent news report, is the inauguration by a large Canadian pulp and paper mill of an uninterrupted year-round logging technique from stump to mill. This process, stated to be the first in history, employs mechanization throughout, once the trees are felled and branched. Pulpwood comprises about 29 percent of Canada's cut of merchantable timber.

Total mill receipts of pulpwood during the first two quarters of 1949 were lower by nearly 1.47 million cords, or about 14 percent, than in the like period of 1948. All regions shared in this decline with the exception of the Pacific Northwest where receipts rose 18 percent in a comparison of the two six-month periods.

Over-all consumption of pulpwood during the first half of the current year was down almost seven percent compared to the like period of 1948. The Lake States area sustained the greatest proportionate decline (16 percent) while the Pacific Northwest's utilization of pulpwood was only moderately lower in 1949.

National stocks of pulpwood declined nearly 30,000 cords during June, at the close of which month total inventories were 6.7 percent below the position on June 30, 1948. The greatest proportionate decline was experienced by the mills of the South (nearly 34 percent) while the Pacific Northwest gained in its holding of wood stocks at pulp mills to the extent of more than 56 percent. The Northeast region, too, registered a gain — 18 percent — in its inventory position.

Percent Distribution, Retail Sales Durable and Nondurable Goods Stores

Year and period	Durable goods stores (Percent)	Nondurable goods stores (Percent)
1939	24.7	75.3
1946 1st hf.	19.8	80.2
2nd hf.	23.2	76.8
1947 1st hf.	25.1	74.9
2nd hf.	26.3	73.7
1948 1st qtr.	27.4	72.6
2nd qtr.	27.4	72.6
3rd qtr.	28.9	71.1
4th qtr.	28.1	71.9
1949 1st qtr.	28.2	71.8
April	29.4	70.6
May	29.8	70.2
June	30.4	69.6

Source: Office of Business Economics, United States Department of Commerce.

Personal Income

Annual rates—seasonally adjusted

Period	Billions of Dollars
1946	176.9
1947	193.5
1948	211.9
1948 4th qtr.	216.6
1949 1st qtr.	213.7
2nd qtr.	212.9
1949 April	212.5
May	212.9
June	213.5

Source: Office of Business Economics, United States Department of Commerce.

Personal Consumption Expenditures

(Billions of dollars)
Annual rates—seasonally adjusted

Period	Total	Nondurable goods
1946	147.8	86.8
1947	166.9	96.2
1948	178.8	102.2
1948 4th qtr.	180.9	103.3
1949 1st qtr.	177.9	99.9
2nd qtr.	178.2	98.7

Source: Office of Business Economics, United States Department of Commerce.

Wood Pulp

Although the domestic wood pulp market remains relatively quiet with most grades available at prices which represent a new low for the current movement, there is a definite anticipation in the industry that a firmer price tone and a more active demand will develop within the next few months. Industry observers, with exceptional opportunities to render a dependable appraisal of the situation in respect to market pulp, report an adequacy of supply in virtually all grades of pulp with the unbleached categories of chemical pulp definitely in surplus.

These observers further point out that the demand for market pulp (consumption) covering the first two quarters of 1949 is down 19 percent below the same period of 1948 while purchases (mill receipts) of pulp have declined by nearly 31 percent in a comparison of the two periods. The difference, as indicated, constitutes a reduction of inventories. Stocks of market pulp, in fact, after experiencing a consistent decline during the preceding 11 months, reached the lowest point on June 30, 1949, than they have been since June, 1947. While total market pulp stocks at the close of 1948 were sufficient for 70-days' operations, inventories at the end of June were enough for only 56 days. Inventories, according to industry reports, are approaching what is regarded to be a minimum level. The nonintegrated mills alone, during the first six months of 1949, have withdrawn about 70,000 tons from their storerooms, a quantity sufficient for around two weks' operations. During that period, stocks of pulp at nonintegrated mills dropped from a total sufficient for 66 days' operations on December 31, 1948, to aggregate inventories sufficient to support only 45 days' operations at the end of the second quarter 1949.

These converting mills, which purchase their wood pulp, have experienced the greatest proportional decline in pulp consumption during 1949 and, inferentially, the largest relative decline in paper and board production. Many of these mills are engaged in the manufacture of specialty items in contrast with the general tendency of the integrated companies, by and large, to concentrate on mass production grades. In consequence, the converting mills-manufacturing items requiring, in general, more exacting and comparatively more rigid manufacturing techniques, have experienced greater difficulty in adapting their operations and in re-during their prices to meet the more

intensive competitive pressure engendered by lower market price levels and a limited and more selective demand.

Not only have the nonintegrated mills reduced their pulp stocks during recent months, but there has also been a steady decrease in wood pulp inventories in all paper and board mills. On June 30 this general drop was 20 percent below the stock position at the end of 1948. Chief motivation for these widespread inventory withdrawals has been the growing unwillingness of mills to purchase wood pulp, in excess of immediate requirements, during the prevalent uncertainties of paper and board price trends. Moreover, the availability of ample pulp supplies, from port stocks and elsewhere, has served to discourage pulp purchases for inventory build-up.

Meanwhile, the third quarter contract prices, lower by six to 20 percent than those of the second quarter, reportedly have not had the effect of stimulating trade in wood pulp. It is not believed that pulp buying mills will expand their buying program merely to take advantage of lowered prices, particularly since the price trend in the intermediate future is as yet difficult of prediction. Any further break in prices is expected to force the closure, at least temporarily, of some market pulp producing mills who have indicated their natural unwillingness to continue operations at price levels which would not provide a margin for profit.

Reports of regional observers of the Commerce Department reveal little recent change in the wood pulp position. The generally restricted production schedules of paper and board mills, geared as they are to current orders, have reduced their interest in pulp to tonnages for near term requirements only. A note of optimism, however, is apparent in the Lake States reports which indicate an average weekly production schedule better than five and one-half days in the district, and pulp prices which are stated to be firm in the area with some mills receiving a flood of orders upon re-opening after their July vacations. Pulp inventories, in several instances, are at satisfactory levels in the region of the Great Lakes while labor and equipment supplies offer no problems at this time.

Special developments reported from the Pacific Northwest include a temporary cessation in the operations of several mills producing sulphite pulp. Along the Columbia and Willamette rivers, pulp production is on its way back to June levels after the vacation shut-downs of early July and no drastic change of production schedules is contemplated by any major producer in the area. In the region of the lower Mississippi Valley, most pulp mills have been running at near capacity, subsequent to the shut-downs, at least up to the end of July. In New England pulp consumption during July declined substantially and further withdrawals were made from inventories. Concern is expressed in that area over the devaluation of the Finnish mark as any further decline in pulp prices, either domestic or imported, is expected to halt the operations of at least some of the regional pulp producers.

Industry opinion is divided as to the possibility that the Finnish currency development may affect export prices of Finnish pulp for shipment to the United States. In the judgment of some observers, the devaluation will cause no immediate change in Finnish prices which are currently on a competition basis with domestic and Canadian quotations. Other students of international pulp movements regard lower Finnish prices as a likelihood. Certainly, the recent approval by the World Bank of a $12.5 million loan to Finland will have the effect of enhancing the production capacity of her pulp and paper industry. Temporary cancellation of a substantial portion of Finland's reparation shipment also contributes to her export potential. United States imports from Finland in June maintained the improved May level of shipments and represented the second highest tonnage of pulp sent to this country since October, 1948.

Total pulp imports from all sources in June were slightly above the average monthly receipts of the current year to date. Imports for the first six months of 1949 were 36 percent less than in the like period of 1948, with receipts from Sweden and Finland declining about 67 percent. Canadian pulp shipments to the United States, though maintaining a relatively more favorable relationship with 1948, nevertheless registered a decline of 22 percent during the first half of the present year. Import trends by various pulp grades displayed a notable drop in receipts of the unbleached categories, amounting to about 56 percent on the average. Bleached sulphate with an increase of almost 28 percent was the only grade to show a definite gain over 1948.

Conditions in the major pulp supplying countries generally presage the availability of increasing quantities of wood pulp when a restoration of normal demand requires increased imports by the United States. Canada, which is currently furnishing nearly 84 percent of our pulp imports has expanded her production of the chemical grades. The latter, although representing less than half of her total output, comprises 86 percent of Canada's pulp shipments to the United States. Canada's over-all pulp production approached 7½ million tons in 1948, or 2.4 percent over the previous year, three new pulp mills being brought into production during 1948, and three additional mills projected for completion in 1950. Promise of ample deliveries of pulpwood give assurance that no hindrance to pulp operations will occur in respect to their basic raw materials. The United States, on the basis of 1947 data, takes about 94 percent of Canada's pulp exports.

Sweden, which supplies over ten percent of our pulp imports, reportedly finds a mixture of favorable and unfavorable elements in the present outlook of her pulp industry. On the less cheerful side of the picture, the delayed revival of her important Argentine market and the reported decline of her Swiss pulp trade have withheld these needed outlets for Swedish pulp. Neither the United States nor the Bi-Zone of Germany are expected to make substantial inroads into Swedish pulp surpluses during the remainder of the year. Reported reservations, as of June 1, of Swedish pulp for shipment to the United States indicated that total 1949 shipments might not reach 150,000 short tons; unofficial predictions have placed the figure as high as 175,000 tons.

United States imports of pulp from Sweden for the first six months of 1949 were 82,000 tons. As for the Bi-Zone, shipment of Swedish pulp to that area, during the first quarter of 1949, were nearly 40 percent less than in the same period of the preceding year.

Another factor that is less than encouraging in the Swedish situation is that formerly (in 1946 and 1947) the chemical pulp mills contracted for their entire year's output during the first month or so. As late as May 1, 1949, however, less than 40 percent of the year's production reportedly had been sold. On the picture's brighter side are the relatively low inventories of her potential customers especially in the United States, the opening of a fairly large chemical pulp market with Poland as a result of trade negotiations of the past spring, and the expectation that a general economic improvement in Europe will revive the demand for wood pulp and products made from it.

Swedish producers persist in their endeavors to restore their United States pulp sales to former levels, while — at the same time — developing immediate outlets in soft currency and sterling areas. In the latter respect, a closer relationship with the United Kingdom and the sterling area, on the part of Sweden's pulp exporters, has taken place.

Wood pulp contract prices announced for third quarter delivery have shown only scattered disposition to dip below quoted levels. Such price cuts have applied principally to imported lots of the unbleached grades. Sizable quantities of wood pulp of overseas origin, too, are reported to be in storage at various ports where they overhang the market while awaiting for a betterment of prices. Groundwood pulp has been available in fairly substantial tonnages at less than contract price levels.

In the view of some industry executives, improvement is anticipated in pulp prices during the next few weeks providing the market for paper strengthens. Meanwhile, speculation is being indulged in regarding the effect of the British dollar cutback on Cana-

dian pulp exports and, indirectly, on prices of Canadian pulp to the United States. Although Canadian pulp shipments to Great Britain are only a small portion of her total exports (less than ten percent), the backing up of even a portion of this pulp would no doubt disturb the present delicate equilibrium of the demand / supply position, and might exert a further depressing influence on prices.

Domestic production of wood pulp in June was moderately below that of May while total output during the first two quarters of 1949 was lower than in the like period of 1948 by 436,000 tons, or approximately seven percent. Bleached sulphate—which finds important outlets in book and fine papers and in food container stock, and has been increasingly substituted for bleached sulphite in some of these end products —was the only major grade to register a gain (almost 11 percent) in a comparison of the two six-month periods. Unbleached sulphite — a leading constituent of sanitary papers, coarse wrappings and folding boxboard—sustained the greatest decline, nearly 21 percent.

Total consumption of pulp gained moderately in June over May, while the first two quarters of the present year showed a drop of 600,000 tons, or eight percent, from the country's pulp utilization in the January - June period of 1948. Unbleached sulphite had the largest proportionate decrease (24 percent) while bleached sulphate, alone of the principal grades, increased its consumption by almost 13 percent.

Aggregate stocks of wood pulp on June 30, 1949, were lower than the same date a year ago by 85,000 tons or about 12 percent. Withdrawals from inventory during June totaled 20,000 tons. A steadily increasing proportion of total pulp inventories is in the hands of the pulp producing mills.

Waste Paper

For the first time in over a year, representatives of the waste paper industry may reasonably find encouragement in certain firming tendencies which the over-all market for their commodity has recently displayed. Corrugated containers, for example — which comprise one-fourth of all waste paper consumed — continue to experience a steady demand and while the stabilization of prices in this grade is due in considerable degree to restricted collections, mill requirements for old corrugated show no disposition to decline from current levels.

An improving demand is also noted for folded news but here again, as in the case of corrugated, the balancing of demand and supply is largely attributed to a drying-up of collections. The diversion of peddlers and other house to house collectors from waste paper to the vending of fruit and other more immediately profitable items has materially cut down an important source of the news grade. At the present level of collections, virtually all available news is finding a market although no general improvement of prices has followed the more equitable supply position.

The higher grades of waste paper, particularly hard white envelope cuttings and both hard and soft white shavings, persist in displaying a firm tone. Apart from the maintenance of a good mill demand for these grades, the continued firmness of prices may be accounted for, in part, by the lowered output of those mills of whose production these grades represent a byproduct.

Book and magazine stock displays a restrained activity with little change apparent in its market position. Mixed papers still constitute the major problem of the industry with excessive supplies aggravating the difficulties of disposal. Despite the scarcity of optimistic elements in the day-to-day situation, some waste paper executives, particularly in the New York market, look forward with confidence to a general improvement in a month or so, if for no other reason than the continued shrinkage of supplies.

Regional reports from the Department's Field Offices reflect the general conditions above outlined. The Midwest area, centering in Chicago and Minneapolis, indicates that waste paper supplies are adequate in practically all grades and calls attention to increased activity in roofing materials and insulation board, both of which use appreciable quantities of waste. The New England district describes the market as generally stagnant with, however, a better demand for corrugated and news. All drives in the area, by nonindustry institutions, have been discontinued.

In the general utilization of waste paper relative proportions of the several main grades have changed somewhat during the past three years. Industry figures, covering the consumption for the first six months of these years, reveal for example, that mixed papers, which comprised over 37 percent of the total in 1947, dropped to 32 percent in 1948, and to less than 31 percent in 1949. This grade along with news goes principally into container and boxboard. The news grades, which finds about the same outlet as mixed, have risen from 25 percent of the total in 1947 to 27 percent in 1949. Corrugated containers which represented 27 percent of total consumption in the 1946 period dropped to 25 percent in 1949, a development no doubt attributable to the increased use of wood pulp in the production of kraft liners. All other categories, comprising the so-called higher grades, increased proportionately from ten percent of the whole in 1946 to 17 percent in 1949, despite the increased availability in the supply of wood pulp, for which these grades are frequently substituted.

Census of Manufactures data covering the utilization of waste paper for the year 1947 indicate that, with few exceptions, waste paper found its way into various end products in the same approximate proportions as those shown in a Government study for a 12-month period during World War II. Container board and bending board continued as the leading outlets, using together nearly 58 percent of all waste paper, while building board and nonbending board were the only items to use a lesser proportion. Building board, in fact, which accounted for nearly 5 percent of total waste consumption in the wartime survey had dropped to less than two percent of the total by 1947, a change which involved a reduction of nearly 200,000 tons of waste paper.

Since 1947, according to industry reports, container board has experienced a reduction in its proportion of total waste paper used. This development is attributable to the increasing consumption of wood pulp in kraft liner board, the production of which has gained during recent months at the expense of the so-called jute liners which were large consumers of waste paper. No doubt this tendency as well as the growing use of virgin pulp in other board products has accounted, at least in a measure, for the drop in waste paper consumption during 1949.

The recent interest in waste paper and wood pulp as competing rather than complementary raw materials lends interest to some basic relationships between the consumption of these two items. Container board, the largest outlet for waste paper, uses over 20 percent of all wood pulp consumed but less than 5 percent of the market pulp offered for sale. Folding boxboard, second largest waste paper user, consumes under five percent of the wood pulp total but uses some 12 percent of all market pulp. These two products along with several others which, in the aggregate, represent outlets for 93 percent of all waste paper, consume 46 percent of the wood pulp total but only 30 percent of that part that is sold in the market. If any conclusion may be drawn from the foregoing data, it is that, by and large, the end products which are the greatest users of waste paper, are, relatively less dependent on market pulp than the items which consume less waste paper—or none at all. Moreover, being less dependent, generally, on market wood pulp, these waste paper consuming products are correspondingly less affected by the fluctuations in market pulp prices. Expressed in another way, the bulk of the large waste paper consuming grades and items are manufactured by mills which produce most of their wood pulp requirements and which are able, therefore, to gear their pulp output directly to these requirements. These integrated mills, in consequence, enjoy the comparative advantage of an assured wood pulp supply and one that is not directly influenced by day-to-day trends in market pulp supplies and prices. This overall situation may be interpreted as affording a measure of stabilization,

from a raw material standpoint, to a large part of the waste paper consuming industries. Correspondingly, these conditions should provide a degree of stability, over the long pull, to the overall requirement for waste paper.

Total mill receipts of waste paper of all grades in June were slightly below May while receipts for the first two quarters of 1949 were nearly 23 percent less than the like period of 1948.

Consumption during June was approximately on the May level though the country's utilization of waste paper for the first two quarters was down 21 percent from the same period of last year.

Nation-wide stocks of waste paper at the mills declined moderately during June at the end of which month they were approximately 14 percent below the position on June 30, 1948.

MANUFACTURES PAPER AND BOARD

Consistent with the discussion and analysis set forth in the Economic Review section of this report, it is important to observe that retail sales of many classes of goods have remained relatively steady over the past several months at a level only slightly below the peak point reached in the last part of 1948. At the same time, wholesale and retail inventories of many classes of goods have declined from the high point of last winter. This would suggest the likelihood of a firming at the manufacturing level which would soon reflect itself in business for paper and board mills and paper and board converters, particularly in the form of various types of packages and wrapping.

The first evidence of a modestly improved situation in paper and paperboard seemed to be apparent the last two weeks of July and the early part of August. A greater feeling of quiet optimism seems to have permeated the ranks of both manufacturers and wholesale distributors of paper, board and its products. There is a feeling that most of the readjustment, in terms of quality, volume of production and consumption, inventory and price stabilization, has taken place for the current cycle. It is felt that not alone do the majority of buyers and consumers of paper, board and its products consider that prices on most grades and items have about reached their low point, but to some observers it also seems that the buying public, in general, senses a similar situation with regard to many types of goods purchased at retail. This latter is probably the most significant element as it ultimately affects the true level of demand and consumption for products of the pulp and paper industry.

Reports from Commerce Department Field Offices, from all sections of the country, as of the first of August, point to considerable stability in prices of practically all grades of paper and board since the middle of July. There were apparently some price concessions during the first two weeks of July as a result of the somewhat demoralizing conditions prevailing at the time of extensive mill shutdowns and lackadaisical interest on the part of buyers.

According to Commerce Department Field Office reports practically all mills and distributors of paper and board agree that they have now entered a truly keen competitive situation not much different than existed before the war. For the most part, executives in these fields are facing the situation with their "heads up" and concentrating on re-educating their prewar salesmen and educating their new salesmen in the aggressive sales work which they expect. They are supplying them not alone with "prewar brands" of sales ammunition in the form of promotional literature, stock lists, quick deliveries, certain concessions, etc., but in many instances with some new types of "postwar brands" of sales ammunition in the form of technically new qualities and some strictly new products and items. In fact, there are some instances in the country of mills and their distributors which have not suffered the average curtailment of the industry because they "jumped the field" with new and improved products and promotional work.

Furthermore, both mills and distributors are heartened by a greater degree

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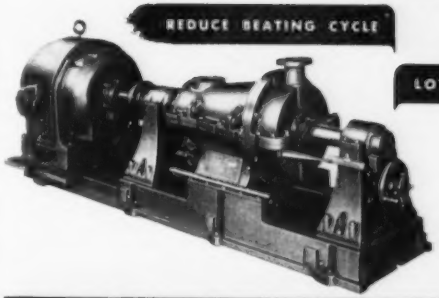

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H-2

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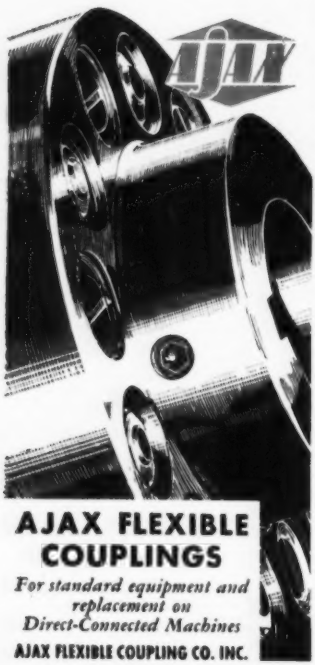

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of cooperation with labor which apparently has also sensed the tightening in competition and many firms report substantially increased efficiency.

June statistics on the production of paper, paperboard, wet machine board and building board gave some evidence of a leveling off from the downward trend of preceding months. For the first six months of the year total production of all grades was down 12.7 percent compared with the same period of 1948; figures for the first five months showed a decline of 12.2 percent. Weekly figures of the American Paper and Pulp Association pointed to an upturn in both paper and board the last week of July bringing the level for that week of production back close to the weekly levels of April and May. While most industry executives, according to Commerce Department field reports, do not anticipate any marked improvement during August they do look for at least a modest increase starting in September and continuing during the balance of the year barring any unexpected major economic, commercial or political developments during this ensuing period. It is apparent that the basic underlying general business situation, as set forth in other sections of this report, tends to substantiate and give a basis for such optimism.

For the first six months of 1949 building board showed a greater decline compared to the same period of 1948 than any other segment in the industry; amounting to a drop of nearly 33 percent. Since most types of building construction have been maintained at high levels this year, the only significant explanation is that, here again, distributors of such building materials as fiber wallboards, etc., have seen fit to reduce their inventories. At the same time, however, it should be pointed out that part of the substantial decline, as shown by the Census data, is the result of one very large manufacturer of board having been completely closed down because of a strike which lasted several months.

The only major grade in the paper and board production schedule to show an increase this year is newsprint being up about 12½ percent over the first half of 1948.

Newsprint

There is good evidence that supplies of newsprint have at long last caught up with the prevailing demand. First of all is the price weakness in spot markets which have dropped from their high point of over $200 a ton a year or two ago down to or below the level of contract prices.

The total new supply of newsprint available to the United States in the first half of this year was 9½ percent greater, or more than 235,000 tons, over the same period of 1948. During this same comparative period, estimated consumption by United States newspapers increased about seven percent while inventories as of the end of June this year at both mills and publishers stood at 474,000 tons or 26 percent greater than at the end of June, 1948. In terms of daily supplies of publishers newsprint stocks, on June 30 this year, they amounted to 39 days compared with 34 days the end of June 1948.

According to data released by the Newsprint Service Bureau, newspaper advertising in the first five months of 1949 was up four percent over the same period of 1948 whereas periodical advertising in the first seven months of 1949 was six percent less than the same period of last year. This situation seems to account primarily for the sustained high level of newsprint consumption by newspapers.

Groundwood Printing, Book and Fine Paper

In the groundwood, book and fine paper field the largest decline in 1949 compared with a year ago was in the fine paper area which registered a drop of nearly 17 percent. However, June data showed a slight increase over May this year and according to Commerce Department Field Office reports this segment of the industry looks forward to a near future upturn in demand and production.

Book papers declined ten percent in the first half of this year compared to a year ago, but June showed a substantial decline below May in the printing category. Perhaps this is some evidence of the reported decline in periodical advertising as cited above in the newsprint section.

Groundwood printing papers as a group declined somewhat less than seven percent in the first six months against a year ago but with June showing a modest increase over May. There is no particular evidence of materially changed conditions in the field of consumption for groundwood papers; scattered reports, however, according to Commerce Department Field Offices, point to some renewed interests in sales promotion literature and other printed advertising media.

Sanitary, Tissue, and Absorbent Papers

Commerce Department Field Office reports state there was no appreciable change with respect to supply-demand conditions since last month.

Production of sanitary paper in the second quarter of 1949 declined 9.7 percent below that in the corresponding period of last year, while the output of tissue and absorbent papers dropped 17 percent and 34.5 percent, respectively, in similar comparison.

Coarse Papers

Coarse papers as a group showed a decline of nearly 12 percent in the first half of this year as compared with the identical period of 1948.

Considerable variations are apparent in gains or losses in the coarse paper field. For example: Glassine and greaseproof declined 13 percent this

year whereas unbleached kraft was up 13 percent and unbleached kraft bag paper was up 10 percent. On the other hand, shipping sack paper showed a large loss amounting to over 36 percent. At least part of these relative gains and losses by comparisons can be explained by the relative level of supply to demand in 1948. In instances where the supply was still very short a year ago the chances are the industries are recording a gain this year.

Boards

Similar to the paper field, demand and production for most grades of paperboard increased the last week of July and in early August. Reports from Department of Commerce Field Offices state that in many areas the paperboard box industry has snapped out of its lethargy toward a stronger and firmer market. Box plants, which were quite pessimistic through early July, now seem to think the general situation has improved and are confident that for the year 1949 sales will approximate 90 percent of 1948. Even though prices are lower on boxes of various types, the lower costs of paperboard and other raw materials should make it possible, they state, to maintain a satisfactory profit ratio for the year. As a consequence, paperboard mills are hopeful of maintaining a firm price structure for the remainder of this year.

For the first six months of 1949, paperboard production as a group, declined 12 percent under the same period of 1948. However, like in other industry segments, declines by individual grades varied considerably for one reason or another. Liners dropped 17 percent from the 1948 period while container chip and filler board fell 19 percent. Folding boxboard, on the other hand, recorded only an 8-percent decline. This is one of the fields where demand and production started falling over a year ago, which perhaps explains, in part at least, the smaller relative decline from last year.

Wet machine boards showed a similar falling off in production. Shoe board was down 23 percent and binder board down 13 percent, comparing the first half of 1948 with the first half of 1949.

PRICES[1]

Reports from Commerce Department Field Offices indicate that, in general, prices on practically all grades of paper and paperboard stabilized during the latter part of July, in most sections of the country.

Bureau of Labor Statistics data on wholesale prices during June dropped below those in May for wood pulp, paperboard (except chipboard, single manila lined, central territory; and liners, eastern territory), and tissue and kraft wrapping papers.

Because the B. L. S. price index on paper is restricted to only a few grades at a few market points, the index is apparently not sensitive to price changes on the many other important grades and market points; furthermore, the paper index is fairly heavily weighted with newsprint which, because of long term contracts, remains at a steady level for months at a time.

[1] Sections on Prices and Labor, as well as statistical charts and tables, prepared by Emilia S. Kirk.

LABOR

Production worker employment in the paper and allied products industries continued to decline during June, reaching a total of 371,000 for the month, according to Bureau of Labor Statistics data. However, hourly and weekly earnings during May rose slightly over those in the preceding month, as did the number of hours worked per week.

Industrial Marketing Course

BROOKLYN, N. Y.—A new course in industrial marketing stressing the engineer's approach to this subject will be presented this fall by the Graduate School of the Polytechnic Institute of Brooklyn on Wednesday evenings.

The course, under the guidance of Prof. Robert S. Aries, will stress the discussion and evaluation of distribution patterns of industrial goods and their relation to the manufacturing process. Marketing policies, techniques of distribution, pricing, advertising, and technical sales and service will be covered. Registration starts early in September.

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Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

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LETTERS

Dear Sirs:

We call your attention to the article entitled "Make Wallboard from Straw" appearing on Page 10 of the August 4th issue of the PAPER TRADE JOURNAL.

The statement contained in the second paragraph of the second column wherein you state, "In recent years Danish engineers and some 90 Irish technicians and workers have built up the plant," is not correct. The Irish Wallboard Plant at Barrowford, near Athy, Ireland, has been designed 100% by our associates, A.B. Defibrator, Stockholm, Sweden. The hardboard project utilizes straw and employs the Asplund Pulping Process. The whole hardboard process is based upon the Defibrator System and the plant was erected and started up by engineers from A.B. Defibrator, Stockholm, Sweden.

We wish to present these facts to you so that you can make the proper correction.

UNO LOWGREN
American Defibrator, Inc.
New York 17, N. Y.

* * *

Dear Sirs:

Re: Tag Manufacturers vs. Federal Trade Commission Decision of U. S. Court of Appeals in favor of Tag Manufacturers becomes final.

You carried an article of the following date and description: May 8, 1941—"Charge Tag Agreement"; May 15, 1941—"F. H. Baxter Answers Tag Charges"; June 26, 1941—"Tag Men Deny Charges."

The final outcome of the Case has just been determined and is completely favorable to the Tag Manufacturers complained against by the Federal Trade Commission. That is a very unusual outcome and we feel that you will want to announce the fact to the end that the impression created by your previous story may be corrected.

Subsequent to the Complaint, filed in May of 1941, extensive hearings were held by the Federal Trade Commission. In May of 1947 the Commission issued its Findings and a Cease and Desist Order. The Tag Manufacturers appealed those Findings to the United States Court of Appeals for the First Circuit, in Boston, Mass., and on May 12, 1949, that Court handed down a unanimous Decision vacating the Findings and setting aside the Order. On August 12th the period, in which the Solicitor General of the United States was privileged to ask the Supreme Court (on behalf of the Commission) to review the Case, expired and the Decision of the Circuit Court became final.

As a matter of clarification, the practices complained against by the Commission never involved the Tag Manufacturers Institute, a trade association. They were practices provided for in an Agreement to report and disseminate prices (already in effect) and periodic statistical reports of sales by product classes. The Agreement was (and still is) between Frank H. Dexter Associates and 30 Tag Manufacturers.

As was stated at the time the Complaint was issued, and later when the Cease and Desist Order was issued, the objective of the tag manufacturers in fighting the case was to determine whether reporting to and dissemination by a central agency of prices already in effect and statistics taken from invoice copies, without agreement of any kind to adhere to prices, terms and conditions of sale was proper, and if such practice was proper, whether businesslike methods to assure the promptness and accuracy of such information could be employed. The Decision referred to above does, since it has now become final, sustain all of the practices employed.

We would be very grateful to learn from you that you have taken steps to give the public complete news of the final outcome of a matter of such importance.

FRANK H. BAXTER
Frank H. Baxter Associates
New York 17, N. Y.

P.S.—We would be very happy to send a copy of the Decision to subscribers to "Paper Trade Journal" who may wish to have one.

MISCELLANY

Newsprint Roll Loss and Damage

Because the Assn. of American Railroads, Freight Claim Division, Joint Committee on Newsprint Paper Damage proposed recommendations that would result (1) in increasing the amount of wrapper necessary to adequately protect rolls of newsprint while in transit and (2) in an amendment to the Consolidated Freight Classification creating mandatory specifications to be observed in loading and wrapping newsprint because of alleged excessive damage, the ANPA in January, 1949, mailed a confidential roll newsprint loss and damage questionnaire to all daily newspaper publishers to ascertain the facts with respect to newsprint loss and damage. The questionnaire contained 32 questions. It was answered by 683 newspapers. 405 were used in the analysis of the ANPA.

These 405 newspapers consumed during 1948, 3,891,840 tons of newsprint, 87% of the total newsprint consumption by all daily newspapers. Of this figure 3,022,606 tons represented all-rail movement, 67% of the total newsprint consumed during 1948.

The analysis was broken down into four groups: Group A—newspapers consuming up to 1,000 tons annually, Group B—over 1,000 tons to 5,000 tons; Group C—over 5,000 tons to 20,000 tons; and Group D—over 20,000 tons annually.

The following facts were developed:

Approximately 23% of all daily newspapers specify to their mill or mills the method or methods by which all-rail shipments of newsprint should be loaded; 72% did not specify methods of loading, with 5% failing to reply.

Sixty-two newspapers reported chafing to be the principal source of damage which, in dollars for the year 1948, amounted to $4,812.44. Greatest cause of damage was flat, crushed or out-of-round rolls, with 129 newspapers reporting this classification as the heaviest type of damage experienced. In dollars, this amounted to $121,764.73 or 43% of the total of $285,465.60 as the principal causes of damage by type.

Approximately 101 newspapers, or 25% of the total reporting, filed no claims for damage. The survey shows there is practically a 50-50 division with respect to newspapers which file claims for all loss and damage and those which only file for partial loss or damage. Of the newspapers returning questionnaires, the claims filed for all types of damage totaled for 1948 $486,687.16 while the claims filed for partial damage amounted to $51,666.65. An interesting feature developed was that 122 newspapers have established a minimum amount below which they do not file claims, while 195 newspapers have no minimum. The minimums range from 35c to $100. per claim. Approximately 296 newspapers reported that .895 was the percentage of the weight of all size rolls used as wrapper protection. Only 88 newspapers specified to the mill or mills the weight of the wrapper to be used whereas 293 newspapers did not.

Evaluation of all replies to the questionnaire, determined that there is no basis of fact for the railroad freight claim agents' allegation that the weight of the wrapper should be increased or that it is necessary to provide a specific rule in the Consolidated Freight Classification to govern loading and wrapping of newsprint.

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Recognizing that certain responsibilities also rest upon the newspaper publishing business, the ANPA Traffic Department, with the concurrence of the Board of Directors, recommends to newspaper publishers that (1) newspapers arrange as far as possible to keep records as to types of loss and damage occurring to shipments of newsprint: (2) there be more adequate supervision by newspapers at unloading points; (3) there be a greater number of approved types of hand trucks used for unloading newsprint; and (4) claims for chafing damage be filed by newspapers only to cover an amount greater than $5.00 per car.

A composite summary was made to the railroad Joint Committee on Newsprint Loss and Damage at Boston on July 6. The ANPA advised the railroad conferees that it would recommend the above four points to the newspaper publishing business providing (1) that the Freight Claim Division abandon its belief that additional wrapper is necessary to provide protection against incidents of transportation over which newspapers have no control and, lacking proof to the contrary, accept our findings as conclusive evidence that the majority causes of loss and damage are those over which the railroads can and do exercise control; and (2) that the matter of amending the Consolidated Freight Classification be abandoned.

The ANPA report was considered by the Railroad Eastern Claim Conference at New York on July 14-15 and adopted, with the proviso that no changes be made by the Freight Claim Division until it was determined the extent to which the four recommendations made by the ANPA will be adopted by the newspaper publishing business.

A copy of the composite completed questionnaire, as well as the presentation made by the ANPA at the Boston conference, may be secured by writing the ANPA Traffic Department.

NLRB Ruling Sets Precedent

WASHINGTON—A union is jointly and individually liable for the back pay of an employe discharged because of a union demand, the National Labor Relations Board ruled on August 20.

The ruling was the first of its kind in a case that assessed monetary liability upon the funds of a labor organization.

Many unions have been sued successfully or fined under the Taft-Hartley Law, and some uncontested claims against them have been settled in Labor Board proceedings. But this decision is the first by the board in a disputed claim for back pay as the result of a discharge upon a union demand.

The board ordered Local 456 of the AFL Teamsters Union, Mount Vernon, N.Y., and H. Milton Newman, Mount Vernon trucking operator, to pay Ernest Fritz Jr., back wages between March 11 and June 9, 1948. Mr. Newman laid off Mr. Fritz during that period after the union called a seven-day strike and demanded his removal from work until he paid his union dues.

The board said the union acted under an illegal union shop contract. The teamsters' local failed to obtain Labor Board approval to demand a union shop. It threw out Mr. Newman's defense that he was forced by the union to lay off Mr. Fritz.

"It is well established," the board said, "that it is the duty of an employer to resist domination of his right and power to employ whether manifested by or toward a union. An employer is not relieved of responsibility for his discrimination because of economic necessity or the exigencies of the moment make expedient a violation of the act."

The board said the Taft-Hartley Law gave the same remedy against a union as against an employer in discrimination cases.

"Where the board finds that an employer and a labor organization are both responsible for the discrimination against an employe, the board's back pay order may be directed against both," it said. "As we have found both the employer and union were responsible for the discrimination suffered by Mr. Fritz, we shall order them jointly and severally to make him whole for the loss of pay which he suffered by reason of the discrimination against him."

The board found that the union had coerced Mr. Fritz in his right to refrain from union activities. It said this occurred when union business agent, Peter Calabrese, told Mr. Fritz he could not work until he paid his dues and added: "You know the union is stronger than you. You cannot fight a union and win."

In addition to ordering the back pay, the board ordered Mr. Newman and the union to cease their illegal activities.

Am. Tissue Mills Parley Cancelled

HOLYOKE, Mass.—A meeting between labor and management of American Tissue Mills, scheduled to be held August 17, was cancelled suddenly and without explanation. At the time of the cancellation of the meeting, Federal Conciliator Charles Ray of Boston was enroute to Holyoke for the conference, as was Western Massachusetts AFL Regional Director Fred Rochford, who had left headquarters at Albany, N. Y.

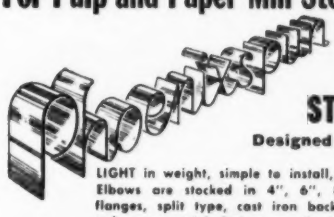
Eagle Lodge is negotiating for a wage increase of five cents an hour, plus a boost of two cents an hour retroactive to November 1, 1948. President Wilson said that if the company would acceed to these demands, it would put the 50 union workers in the Stony Brook and Pearl City divisions of American Tissue Mills on a wage par with papermakers here.

Negotiating with Henry Wilson, president of Eagle Lodge of Papermakers, are Financial Secretary Andrew Beaton and Recording Secretary John St. John. Representing the company are Executive Vice-President Benjamin F. Perkins, Jr.; Judge Philip O'Brien, legal counsel; and Attorney M. Bertha Dean, personnel manager.

ECA Authorizations

WASHINGTON.—Paper procurement authorizations by ECA during the week ended August 13 included the following: Belgium-Luxembourg, pulp and paper, except newsprint, $30,000, from Canada; France, $238,000, from United States; Greece, newsprint, from Canada, $4,000; Ireland, $37,000, from Canada

For Pulp and Paper Mill Stock and White Water Lines



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WRITE for illustrated folder and dimension data.

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U. S. Int. Trade Fair Proposed

WASHINGTON — The Department of Commerce went on record two years ago as recognizing the importance of international trade fairs as a means of promoting world trade, and has been recommending the establishment of such fairs in the United States.

An International Trade Fair, the Department states, can be defined in general terms as a worldwide exhibition of samples of various types of domestic and foreign merchandise and of services, shown on a large scale for the purpose of materially stimulating international business transactions and sales. Such a trade fair is conducted on permanent fair sites once a year, and for a period usually not exceeding three weeks. Inasmuch as an International Trade Fair is primarily an enterprise to increase international trade, the exhibition of samples and services is of particular interest to domestic and foreign businessmen, although the public may be admitted on a restricted basis. As a rule, over the counter trading is not customary. Such fairs must be held in temporary or permanent buildings of a size and with sufficient facilities to serve adequately the purposes of the fair. They must be organized and managed by non-profit organizations which can demonstrate that they are able to assure a reasonable degree of efficient operation and financial responsibility, the Department adds.

No international trade fair has ever been held in the United States. However, as a result of the efforts of this Department various cities in the United States are now engaged in planning the staging of an international trade fair as an annual event. Among those having advanced plans for such a project are Detroit, Philadelphia, Atlantic City, Washington, D. C., New York and Chicago.

Other cities which have expressed interest in holding annual international trade fairs are: Atlanta, Georgia, and Dallas, Texas.

Building

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- We design, build, and equip paper and pulp mills ... steam generating plants ... and facilities for eliminating stream pollution.
- Under one contract and one responsibility, we deliver jobs complete, ready for operation.
- We also furnish engineering reports and surveys. Current cost data available at all offices.

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INDUSTRIAL ENGINEERS AND BUILDERS

THE FERGUSON BUILDING • CLEVELAND, OHIO
OFFICES IN NEW YORK, HOUSTON, CHICAGO, CINCINNATI AND LOS ANGELES

Far-Reaching Timber 'Crop' Ruling

LITTLE ROCK, Ark.—A judge's ruling that Arkansas timber is a crop brought these two interpretations on August 16 —that it is a far-reaching decision; that it is a new application of existing court doctrine.

Pulaski Chancellor Frank H. Dodge handed down the judgment in a family contest involving distribution of income from private-owned timber lands in Bradley County, in South Arkansas.

Said Chancellor Dodge: "Timber produced from lands held for selective cutting and managed as the lands in question have been managed, now constitute a crop, and that timber cut periodically under a program of selective cutting, and on a sustained yield basis is the essential product of the land, and such timber and its cutting constitutes a crop in Arkansas.

"From the standpoint of the needs and resources of Arkansas, the growth of timber is recognized and should be recognized as a crop."

Since considerable money is involved in the case, Chancellor Dodge said he expects the case to be appealed.

George Benjamin, executive secretary of the Keep Arkansas Green Ass'n., said he thought the decision was far-reaching because it opens the way for timber-growers in Southern states to apply for loans from financial houses as do growers and marketers of cotton and rice.

An attorney in the case, who asked not to be identified, said it was probably the first such decision handed down by a court in this area, but that it wasn't novel—just an extension of previous rulings that timber is income.

Canada's June Asbestos Exports

OTTAWA.—Exports of asbestos and products from Canada dropped to $1,468,000 during June this year as against $3,691,000 in June a year ago and declined to a cumulative total of $9,510,000 in the first six months of 1949 ending June compared with $19,372,000 in the corresponding period of 1948, Canadian Government announces.

96,000 of 978,000

OTTAWA. — The Labor Department has announced that, out of 978,000 registered trade unionists in Canada, wood and wood products workers affiliated with unions numbered 96,000 according to the latest tabulations.

Federal-State Minn. Land Swap

MINNEAPOLIS—A land swap between the federal government and the state of Minnesota was given preliminary approval August 16 by the state land exchange commission.

The commission authorized Chester S. Wilson, Commissioner of Conservation, to hold a public hearing on exchange of the lands.

As outlined by Mr. Wilson, the state would receive 21,127 acres of federal lands in the Pine Island state park and the Black river management unit, Koochiching and Carlton counties. In exchange, it would give the federal government 15,899 acres of state-owned land in the Chippewa and Superior national forests.

The federal land is appraised at $133,055. The state land at $133,064, Mr. Wilson told the commission. The exchange is mutually satisfactory to both governments as a means of consolidating holdings.

No date for hearing has been set. The members of the state land exchange commission are Governor Luther W. Youngdahl, Stafford King, state auditor, and J. A. A. Burnquist, attorney general.

Tex. A. & M. Instrumentation Course

COLLEGE STATION, Tex. — The Agricultural and Mechanical College of Texas will offer its fourth short course on Instrumentation for the Process Industries, October 12 - 14, as a seminar with lectures and discussions on the subject of automatic control. Cooperating with the college in the presentation of this course will be industrial concerns manufacturing oil, gas, and chemical products and manufacturers of instruments and automatic controls. The lectures will cover measurement and control of temperature, pressure and liquid level, time control, and other allied subjects. The relationship between practice and basic control theory will be stressed. Further information may be obtained by writing Professor P. G. Murdoch, chemical engineering department, Texas A & M College.

New Job for Montreal's Finest

MONTREAL—Boleros made of paper are City Councilor Dave Rochon's suggestion for eliminating shock to Montreal's modesty caused by summer low-and-behold dresses. Mr. Rochon, on August 15 said police could carry thin, prettily colored printed paper boleros—short jackets. They would offer one to any woman walking the avenues with too much bust or shoulder showing. Mr. Rochon said it was mostly visitors from the United States who display too much.

Time Coating Mill to Panelyte

NEW YORK — The Panelyte division of the St. Regis Paper Co., reported on August 22, acquisition from Time, Inc., of a paper coating mill at Kalamazoo, Mich., which will be converted to the production of laminated plastics.

OBITUARIES . . . .

Charles R. French, 46, president of Charles R. French & Co., New York City, public relations consultant, died at his home in Bethesda, Md., of a heart attack on August 16. Mr. French had long been identified with public relations work in the pulp, paper, and allied fields. He served with the National Lumber Mfr's. Ass'n. for 13 years and as director of the American Forest Products Industries for four years. Recently he had been called to Washington to work on a special assignment with the National Securities Resources Board. Surviving are his widow, Mrs. Hilda M. French; his parents, Mr. and Mrs. Arthur E. French; and two sisters, Mrs. Burl Purdy and Mrs. Edgar Rodgers.

James Butler, 55, sales manager of the fine paper department of the Walker-Goulard-Plehn Co., New York City, died suddenly at his home in Middle Village, Long Island, on August 13. Surviving are his widow, Mrs. Helen Butler, and a son, James Butler, Jr.

William M. Harris, 49, sales representative for several paper firms in Ontario, Que., for the past 25 years, died on August 5 in Toronto after a long illness. His widow and nine children survive.

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
July 9	44.7	July 10	62.3
July 16	76.3	July 17	87.1
July 23	83.2	July 24	103.1
July 30	84.7	July 31	96.5
Aug. 6 (Revised)	83.3	Aug. 7	97.0
Aug. 13	85.0	Aug. 14	96.1

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	100.1	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.1	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	89.1
Apr.	100.8	Aug.	96.8			Apr.	85.1
		Sept.	91.8	Year Avg.	96.2	May	82.7
						June	280.9
‡ Preliminary.						July	272.2

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	93.8	88.1	87.7	87.7	99.8	103.7	97.5	85.4
Year Average	90.4	87.8	88.1	89.4	101.1	104.3	96.2	

PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
July 9	35	July 10	56
July 16	64	July 17	84
July 23	76	July 24	91
July 30	80	July 31	92
Aug. 6	82	Aug. 7	90
Aug. 13	84	Aug. 14	93

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1948	88	85	79	79	78	75	64						

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

WELDCO ROLLS

FOR LONGER SERVICE LIFE

LOWER OPERATING COSTS

They're Standard Equipment in America's Biggest Paper Mills

• And you'll find them in many textile, food, and chemical plants, too. Weldco Monel-covered rolls are carefully ground for accuracy and uniformity . . . then polished to a fine, smooth surface that reduces friction and keeps materials from sticking.

Weldco rolls are preferred, also, because of their high strength and stiffness — because they do not sag or "whip," do not corrode or accumulate pitch. They need very little cleaning, will withstand acids and alkaline white waters in fine shape, and show little wear on fourdrinier wires.

The Weldco covering process can be applied to both new and reclaimed rolls, eliminating the cost of new cores and providing substantial savings. Write or phone today for complete information and descriptive literature.

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Complete Service for
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Manufacturer of
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Manufacturers of Felts of Superior Quality
for Every Grade of Pulp and Paper
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SUPERCALENDERED	ENVELOPE
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EGGSHELL	CUP AND CONTAINER
MUSIC	FILE FOLDER
POSTER	TAG
BOND	COATED
WRITING	MACHINE COATED

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KRAFT LINER BOARD

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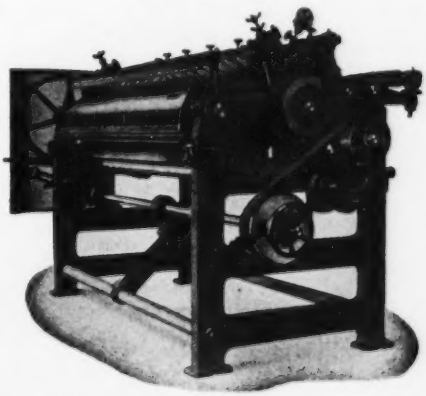
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Charleston, South Carolina

MODEL 28

ROLLER BEARING CUTTER



HAMBLET MACHINE CO.

LAWRENCE, MASS.

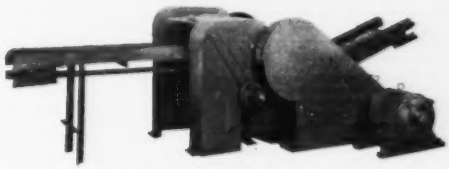
MAKERS OF
SINGLE, DUPLEX AND DIAGONAL PAPER CUTTERS
CUTTER KNIVES, PATENT TOP SLITTERS

Both Large and Small Paper Mills Use —

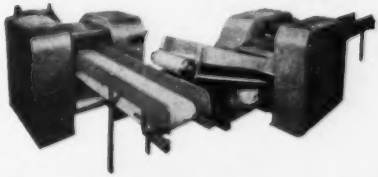
TAYLOR-STILES RAG CUTTERS

The size range of these efficient cutting machines—one ton to five tons an hour—provides for all capacity needs of paper manufacture.

TYPICAL TAYLOR-STILES CUTTERS ARE—



NO. 1 RAG CUTTER—Capacity, one ton an hour. This fine machine compares in every way with our big five-tons-an-hour cutters.



NO. 36 TANDEM RAG CUTTER—Cross cuts the rags for greater uniformity in the size of cuttings. Capacity one and one half tons an hour.

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CLEARING HOUSE

HELP WANTED

WANTED
CUTTING—CREASING DIE MAKERS

If you are a journeyman cutter-creasing die maker with experience in the carton industry, we are interested in employing you.
Write our employment office giving your age and experience.

SUTHERLAND PAPER COMPANY
Kalamazoo 13, Michigan. A-25

PULPMILL CHEMIST

New West Coast Sulphate Mill has excellent opportunity for Chief Chemist to take charge of control laboratory, organize testing procedures and assist in expansion of laboratory facilities. Applicant should have five years experience in Kraft mill control, pulp testing, etc. with supervisory ability. Reply giving full particulars as to age, experience, technical qualifications, history and salary expected. All replies strictly confidential. Box 49-406, care

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (29 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
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Can You Qualify?

Sales positions with National Wide staff of large Specialty Paper Manufacturer. We will train the right men for positions with good opportunities for advancement.

We need several men with college educations who are neat appearing, have sales personality, are single, and willing to travel. Ages preferably from 20 to 30.

Apply Box 49-397 giving full particulars about your self, background and education.
S-1

WANTED—Working Master Mechanic for two machine tissue mill located 60 miles from New York City. Excellent opportunity for good, steady and sober man. Give full information as to age, experience and salary etc. Address Box 49-395 care Paper Trade Journal. A-25

HELP WANTED

MEN WANTED
POSITIONS OPEN

Manager cylinder board mill; plant engineers, master mechanics; superintendent textile and multi-wall bag plant; chief chemist, facial tissues.
We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass.
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WANTED

First class Paper Mill Superintendent for two machine mill.
Must have experience on straight Fourdrinier and Cylinder machines.
Also experience using old paper stock, making Kraft Papers, Corrugated Material, Boxboard specialties, etc.
Address all replies to

James J. (Shorty) Andrews
Walloomsac Paper Mills, Inc.
P.O. North Hoosick, New York TF

PAPER CHEMIST

Man familiar with soft papers used in rubber saturating, wanted by paper manufacturer. Applicant must be experienced and willing to work. Outline educational background, give a list of past employers and nature of work for each, together with references and salary expected. All replies will be held in strict confidence. Address Box 49-404 care of Paper Trade Journal. S-1

WANTED—Young man experienced in manufacture and sales vulcanized fibre. Address Box 49 341 care Paper Trade Journal. TF

TOUR FOREMAN—Pulp mill foreman for mid-west kraft pulp and paper mill. Should be college graduate 25-35 years old with laboratory and mill experience. Excellent opportunity for advancement. Address Box 49-394 care Paper Trade Journal, giving complete information. A-25

SITUATIONS WANTED

SUPERINTENDENT
30 years of practical experience

manufacturing highest grades light and heavy weight papers on modern high speed cylinder and Fourdrinier machines high grade folding box board; kraft; book and bond specialties from sulphite, sulphate, groundwood, de-inked papers. Can get quality and production. Best of reference. Box 49-388, care of Paper Trade Journal S-8

SUPERINTENDENT or Asst. Supt.—Age 39, desires to make change. 18 years experience on high speed Fourdrinier with Yankee Dryer machines, making toilet tissue, facial tissue, towels and napkins. Address Box 49-422 care Paper Trade Journal. S-15

SITUATIONS WANTED

CHIEF PLANT ENGINEER

25 years experience directing plant engineering and shop supervision as chief engineer in full charge of plant expansion, construction, maintenance, design, development and building of special converting machinery. I am a master-mechanic, power plant supervisor and industrial engineer experienced in efficiency control, time study, wage incentives, standardizing costs, inventor and machine designer. Expert in leadership and control of men. Address Box 49-402 Paper Trade Journal. S-1

SALES ENGINEER
DISTRICT MANAGER

Tappi Member. Twenty years experience contacting mills of New England and Northern New York. Well acquainted with production procedure, especially Sizing, Finishing, Coating. Now employed but wish to improve position and responsibilities.
Address Box 49-380, care Paper Trade Journal A-25

EXECUTIVE—Board and paper conversion mill experience, excellent production and labor relations history, currently plant manager. Seeks opportunity. Address Box 49-239 care Paper Trade Journal. A-25

MECHANICAL ENGINEER—Over 25 years in the pulp, paper and board industry in engineering and operation management. Extensive background in chemical and semi-chemical pulp, paper and board manufacturing. Power, Maintenance and construction. Address Box 49-392 care Paper Trade Journal. S-1

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FOR SALE

Two Heavy Duty 72" #10 Model 5 Camachine Slitter Rewinders.

Complete with new style crush cut slitting units and water-cooled mill roll brakes. All in perfect condition ready for use.

Extra slitting units available.

Box No. 49-378 care
Paper Trade Journal

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MACHINERY FOR SALE—Paper Bag Machines, Square, Flat and self opening type. Good condition. Address Box 49-405 care Paper Trade Journal. S-8

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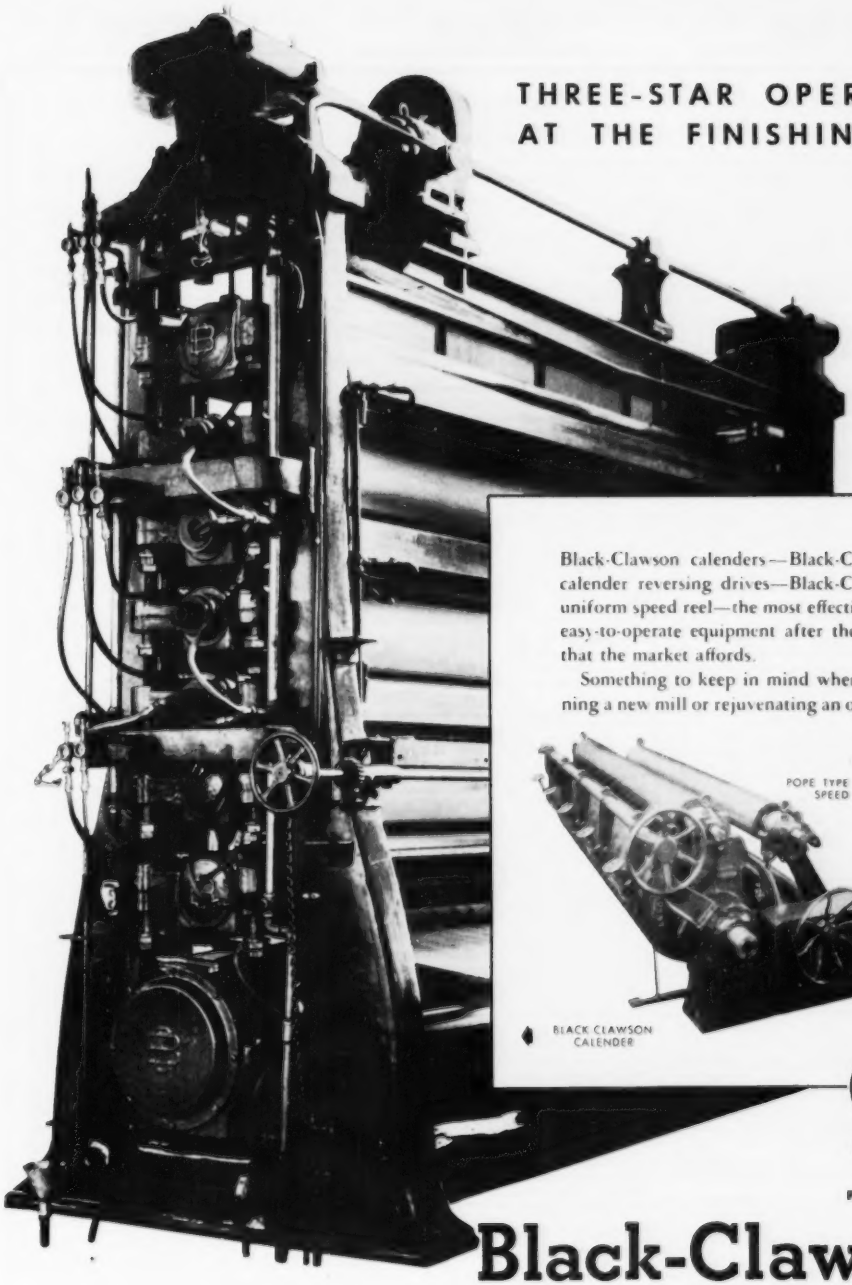
OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

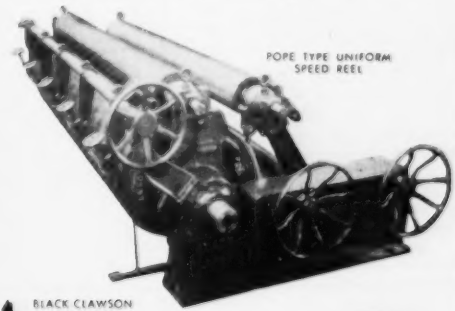
Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.

THREE-STAR OPERATION AT THE FINISHING END



Black-Clawson calenders—Black-Clawson calender reversing drives—Black-Clawson uniform speed reel—the most effective and easy-to-operate equipment after the dryer that the market affords.

Something to keep in mind when planning a new mill or rejuvenating an old one.



POPE TYPE UNIFORM SPEED REEL

BLACK CLAWSON CALENDER

KOHLER SYSTEM EQUIPMENT

PRODUCT OF DILTS

Black-Clawson

HAMILTON, OHIO

Divisions:— SHARTLE BROS. MACHINE COMPANY, MIDDLETOWN, OHIO • DILTS MACHINE WORKS, FULTON, NEW YORK

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FOR SALE | FOR SALE | FOR SALE

FOR SALE
A Paper Treating Machine

This consists of the following:

Unwind stand: one set of press rolls with pan, bottom rubber covered, top gun metal. 16 x 84".

First section of five dryers 36 x 82" with bottom felt and Lodding doctors and spring roll.

Size press, rolls rubber covered and gun metal 16 x 84".

Second dryer section consisting of 18 dryers 36 x 82", with bottom felt, Lodding doctors and spring roll and frames for top felt.

80" Farrel calender with levers and weights, flexible doctors. Bottom roll 18" diameter, with 10" journals; one 12" roll; three 8" rolls and one 16" roll.

Open side Rice Barton reel with drums 18 x 78", 34" centers.

Two drum Bagley & Sewall winder with slitter part, drums 12½" x 94". Fourteen sets of Koegel slitters, anti friction.

Three spare press rolls and one spare dryer with gears.

Machine is driven by Reliance drive with motor generator set which was put in new in 1942 at a cost of about $14,000.00.

Equipment has been operating up to speed of 450 FPM, all set up, in very good condition.

Price $15,000.00. If interested telephone or wire us.

FRANK H. DAVIS COMPANY, 175 Richdale Avenue, Cambridge, Massachusetts

Telephone Trowbridge 6-0366

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DRYER GEARS

17—for 36" dryers, 108 T, 43¼" P. D., 7¾" bore, 3½" face, 1¼" P.

12—for 48" dryers, 113T, 54" P. D., 8" bore, 4" face, 1½" P.

NEW CONE PULLEYS

6—Taper Cone Cast-iron split pulleys, 36-9/16" x 35-7/16" diam., 18" face, 3-7/16" bore, ⅞" x 7/16" K.W.

1—56-9/" diam. x 49-6/17" diam., 18" face, 3-15/16" bore.

1—48-9/16" x 47-7/16" diam., 3-15/16" bore, 18" face.

SOAPSTONE

100 blocks, 12" x 12" x 18". New Material.
150 blocks, 12" x 18" x (6" x 9½"). New material.

SOLID CAST-IRON CONE PULLEYS

1—41½ x 43-15/16" diam., 24" face, 3-15/16" bore, split hub.

1—48 x 49½" diam., 30" face, 4-15/16" bore.

1—46 x 49" diam., 30" face, 5-7/16" bore.

1—39 x 41" diam., 30" face, 5-15/16" bore.

1—41¼ x 43¼" diam., 30" face, 4-15/16" bore.

1—44¼ x 46¼" diam., 30" face, 4-7/16" bore.

USED CONE PULLEYS

Cast iron split pulleys

1 38 x 40" diam., 20" face, 3-15/16/ bore.

1—39 x 41" diam., 20" face, 3-15/16" bore.

1—38¾ x 40½" diam., 20" face, 3-15/16" bore.

1—42½ x 44½" diam., 20" face, 3-15/16" bore.

1—41¼ x 44½" diam., 30" face, 3-15/16" bore.

1—40⅝" x 43⅝" diam., 30" face, 3-15/16" bore.

1—39" x 41½" diam., 30" face, 4-15/16" bore.

1—41 x 43½" diam., 30" face, 4-7/16" bore.

1—46½ x 49" diam., 30" face, 4-15/16" bore.

2—43¼ x 45¾" diam., 30" face, 4-7/16" bore.

PAPER MILL STORES

P.O. Box 260, Lockport, New York

A-25

GOOD VALUES—NEW & USED

34" Beck Sheeter, one year old.
58" and 78" Hamblet Sheeters.
34" Camachine No. 6 Slitter.
32" Hobbs and 34" Inman shear cut Slitters —very cheap.
39" Chandler & Price Automatic Power Paper Cutter.
New 44" National Auto. Power Cutters and 36" National Hydraulics.
Baling Presses—both hand and power.
Brackett 3-knife Trimmer.
28 x 41 Thomson Cutter & Creaser.

THOMAS W. HALL COMPANY, Inc.

120 West 42nd St., New York 18
(Plant at Stamford, Conn.)

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Paper Mill with 3 Fourdrinier Machines, complete with auxiliary equipment. Designed for 60 tons of Specialties, News, Book, Toweling, Kraft, etc. Can be put in operation immediately. Covers 80,000 Sq. Ft., Buildings fully sprinklered, Railroad Sidings, excellent water, 1800 H. P. stoker-fired water tube Boilers installed 1936. Excellent labor conditions. All located within radius 100 miles New York City, Baltimore, Washington. Immediate possession. Attractive proposition!
Address Box 49-300, care Paper Trade Journal.

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FOR SALE—Six Globe Rotaries—14' diameter. Good condition. Need room. Will sacrifice. Sangamon Paper Mills, Inc., 137 W. Pershing Road, Chicago, 9, Ill. S-8

FOR SALE

2—Horizontal Rotary Digesters, 8' 6" I.D. x 9' 6½", volume 450 cu. ft., complete with insulation, glands, bearings, drive gears, and 5 HP ball bearing gearhead splashproof motors. Shell, heads, manways, and covers of 1⅜" A.S.T.M. A-70 Fire Box Quality Steel lined with 7/64" type #317 stainless steel alloy. Maximum working pressure 250 lbs. per sq. in. gauge. Working temperature 380 to 390 degrees —F., Maximum test pressure 500 lbs. per sq. in. gauge.

1—General Electric Motor, 50 HP, 2200 volts, 870 RPM, Serial 1378682 complete with starter.

7—Model 2 Bird Screens, complete with plates, showers, and drive less motor.

Write Box 49-407, care Paper Trade Journal. S-8

FOR SALE

Centrifugal Separator and Screen. Thickener Washer. Mould 4' in dia. by 112" long. Both machines have barely been used. They have become unnecessary on account of changes in mill. Will sacrifice. Complete details and prices cheerfully submitted by General Paper Co., Coatesville, Pa., R. D. 3. S-8

BEATERS—1—Horn Wooden Tub Beater, 1200 lb., with hood, bed-plate, 60 HP motor, starter and belt.

CALENDER ROLLS—6—10½" x 124". 1—18" x 124". Ground. 1—Set of calender frames with bearings. Also frames for small stack with bearings.

1—Stack, 5 rolls, 74". 1—Stack 106", 9 rolls.

1—Calender Roll, 14" x 62", bottom roll. 1—Pusey and Jones Rewinder, two drum, 122", with drive and slitters.

DECKERS—1—36 x 90", rebuilt, with couches. Low-cost.

DRYERS—5—48 x 90", with frames, bearings, steel cut gears, 33—48 x 126 dryers, with bearings, rope sheaves and packing glands.

2—42 x 100 dryers, 100 lb. steam pressure, cast-iron.

1—HAUG REFINER, Size 3, Type 3, very little use. 8 rolls. FOURDRINIER WET-END, 133" x 61", 23" suction couch. 1—22" x 138" Sandusky suction press shell, 1" thick. 1—20" x 94" rubber covered suction press shell, with suction box.

1—23" x 137" Sandusky suction couch, complete with stands.

JORDANS—1—Mammoth, Noble and Wood, for direct drive. 1—Miami 26 Jordan, water-cooled bearings, bronze filling. 1—Horne Jordan, water-cooled bearings, belt driven.

LABORATORY BEATER—5 lb. Noble and Wood, with bronze bars in roll, anti-friction bearings. Very modern.

PUMPS—1—7 x 18" Beloit triplex pump, with 10 HP motor. 1—Shartle 10 x 20" duplex pump with 15 HP motor.

PRESS ROLLS—1—28" diam. x 132" face, 7¾" journals, ⅞" new rubber never used. Bearings included.

1—26" diam. x 138½" face, 9" journals, ¾" new covering like Stonite by Cincinnati Rubber. Never used. Bearings included.

2—150" face x 23" diam. rubber covered press rolls.

6—162" face x 25" diam. rubber covered press rolls.

1—Sandusky suction press roll, 97" drilled face x 14.9" diam. with new set of gears.

16—Dryer Felt Rolls, steel tube, 92" to 94" face 7" to 9" diam. with SKF Bearings.

SCREENS—2—Bird 6-plate screens with scrapers. One 4-plate. 1—Harmon 10-plate screen. Very little use. 1—Appleton 10 plate screen, roller shoes, plates, motor. 3—Valley Iron Works 8-plate screens, with plates, scrapers, motors.

PAPER MILL STORES

P.O. Box 40, Lockport, New York

A-25

FOR SALE

1—Plain Extractor Roll 28" diameter x 12'5" face.
1—Felt Suction Roll 22" diameter x 12'9¾" face, complete with L-7 Nash Vacuum Pump.

BARKERS
1—5' Carthage Disc Barker

BEATERS
1—800 lb Beater—iron tub

BEATERS (Laboratory)
2—Dilts Iron Tub Laboratory Beaters. Beater rolls 14" diameter x 10¾" face, including motors.

BRASS FELT ROLLS
9—4" diameter x 140" face (with bearings)

BREAST ROLLS
1—100" x 14".
1—114" x 14"
1—120" x 14"

CALENDER STACKS
1—72" 5 roll Calendar Stack.
1—76" 7 roll calender stack (heavy duty).

CHIPPERS
2—96" Murray 4 knife Chippers.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Jeffrey Hammermill.

CYLINDER MOULDS
1—36" diameter x 80" face.
1—30" diameter x 72" face.
1—36" diameter x 79" face.

DECKER
1—Decker—48" diameter x 84" cylinder mold
1—Pusey & Jones Deckers Cylinder mold 42 x 146, anti friction bearings, including rubber covered couch roll.

DRIVES
2—#4 Reeves Drives.
1—#2 Reeves Drive.
1—Smith & Winchester mortise gear Drive.
1—Foote—7½ h.p. Speed Reducer (Ratio 240 to 1)
2—Smith & Winchester Mortise Gear Drives with 26" diameter clutches—Ratio 8 to 1.
6—Enclosed drives. 75 h.p., ratio 8 to 1. Complete.

DRIVES (Angle)
1—General Machine Company 16 : 1.
1—Philadelphia 50:1 — 1 h.p. — 1200 r.p.m.
1—Philadelphia 21½:1 — 3 h.p. — 1200 r.p.m.

V-BELT DRIVE
1—21½" diameter x 7½" face, 5 groove.
1—16⅓" diameter x 7½" face, 5 groove. (With clutch).

DRYERS
14—48" diameter x 112 face.
30—36" diameter x 102" face.
50—42" diameter x 126" face.
9—36" diameter x 72½" face, with gears and bearings.
1—48" diameter x 91" face.
2—25" x 120" (Baby Dryers).
2—36" x 143".
1—24" x 130".

EMBOSSER
1—84" Hudson Sharp Toilet Embosser. Spare engraved roll.

FELT ROLLS
20 Felt Rolls—Brass covered 8" to 12" diameter.

FILTERS
3—IMPCO Lime Sludge Filters.

FLAT SCREENS
1—6 plate Shartle Flat Screen
1—8 plate Packer Type Flat Screen.
2—12 Plate Murray Dunbar Flat Screens.
2—14 plate Sandy Hill. (Never used.)

FRICTION CALENDERS
2—30" Waldron.
2—38" Waldron.

HYDRAULIC PRESS
1—Watson-Stillman Co. (Platen 24" x 24").

JORDANS
2—Noble and Wood—Mammoth Type
1—Emerson Jordan—25 to 30 tons capacity —iron plug including new spare iron plug.

MISCELLANEOUS
1—Caustic Mixer.

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2—5 h.p. ball bearing—splash proof motors —3/60/440, 1160 r.p.m.
1—½ h.p. ball bearing—splash proof gearhead motor—3/60/440, 1725 r.p.m.
1—2 h.p. ball bearing—splash proof gearhead motor—3/60/440, 1725 r.p.m.

PRESSES
4 Sections of presses approximately 24" diameter. Rubber and Bronze.

PRESS ROLLS
Various sizes.

PRINTING MACHINE
1—3 color 40" Rotary Cottrell Printing Machine, A-1 condition, provision for 2 more colors.

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Various cone and assorted pulleys.

PULPER
1—Jones Pulper. Complete with motor and drive.

PUMPS
2—Weil Pump Co.—100 g.p.m.—100 P.S.I. including 15 h.p. motors (new equipment).
1—Bell & Gossett—300 g.p.m.—120' head—including 15 h.p. motor.
1—Goulds Sump Pump—50 g.p.m.—20' head —including motor.
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.

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1—72" Beloit Reel.

ROLLS
500—Brass tube-steel tube—rubber covered iron rolls—various sizes.

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1—#2 Bird Rotary Screen.
1—#2A Bird Rotary Screen.

SAVEALL
1—#5 Bird Saveall.

SCREEN PLATES
30 Plates cut .016.
10 Plates cut .008.
Also other [illegible]

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1—136" Moore & White Sheeter, duplex with layboy

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1—208" Cameron—Type 20.
1—84" Cameron—Type 18.
1—72" Cameron—Type 28-8-7-D (shear cut)
1—62" Cameron—Type 10-10-AJ.
1—50" Cameron—Type 24-2L
1—42" Cameron—Type 40-4-B.
1—42" Cameron—Type 24-2A.
1—42" Cameron—Type 9-5
1—42" Cameron Constant Tension, with pneumatic control.
1—30" Langston.
1—62" Cameron—Type 6 (Shear cut).
1—115" 2 drum Waldron
1—62" Cameron—Type 28-3D.

SQUEEZE ROLL
1—Rubber Squeeze Rolls, 20¾" diameter x 102" face.

STOCK PUMPS
1—10 x 20 Shartle Duplex.
4—7 x 16 Shartle Duplex.
Numerous other Centrifugal Stock Pumps Advise us to your requirements.

SUCTION BOXES
5—Suction Boxes, 82" drilled face x 8" wide.

SUCTION COUCH ROLL
1—24⅞" diameter x 160" drilled face.
1—Sandusky 14⅛" diameter x 103" drilled face.

SUCTION PRESS ROLL
1—Downingtown Suction Press Roll 24" diameter x 110" face.

SUCTION PRESS ROLL SHELL (Only)
1—29¾" diameter x 134" drilled face.

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1—54" 9 roll supercalender stack, completely rebuilt including motors, etc.

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40—Table Rolls 82" face x 3" diameter.

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2—Dietz 81" Toilet & Towel Machines.

TRIMMER
1—56" Smith & Winchester—Undercut.

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2—Proctor & Schwartz Tunnel Dryers, 10 ton and 5 ton capacity.

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1—150 h.p. Westinghouse Type C-Gear Turbine (Recently rebuilt).

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2—H7 Nash Vacuum Pumps.
1—#4 Nash Hytor Vacuum Pump.
1—L5 Nash Vacuum Pump.
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1—Iron end Vat only, for decker or saveall, suitable for cylinder mold 36 x 130.

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2—8' diameter x 175" face

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Small paper mill with cylinder machine. Situated advantageously to sources of raw material and sales outlet. Ample room for converting plant in same building. Terms. Address Box 49-357, care Paper Trade Journal.
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Complete suction press section and two plain press sections—unused—94" face bottom rolls. Box No. 49-419 care Paper Trade Journal. S-1

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FOR SALE

FOR SALE

1—82" Laminator—includes 6 pr. backstands, 5 sets of squeeze rolls, housings, frames, etc.—3 cooling drums, 2 single spool reels, 4 drum winder, single cutter, complete drive.

1—24" dia. x 123" face Downingtown extractor roll, R. C. top roll. Anti-friction bearings, top arms, raising arrangement, etc.

3—18" dia. x 72" drilled face—Beloit suction press rolls.

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1—8 x 18 Duplex Shartle-Miami Pump.

1—12 x 20 triplex Shartle-Miami pump (rebuilt).

1—8 x 12 Black-Clawson fan pump.

1—10 x 10 Class "L" Shartle centrifugal pump.

6—600# C. I. tub beaters.

1—1500# C. I. tub beater.

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S-8

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Immediately—#2 Bird Rotary Screens. Advise condition, price and cut of plates.

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Ohio-Michigan-Wisconsin Section
SALES REPRESENTATIVE, commission basis, on nationally known major paper mill supplies. Business all established and presently grossing about $1,000.00 per month. Requires high-grade man who can travel continuously and hold, and build up, this important territory. Reply, giving qualifications, age and papermill knowledge and experience to Box 49-400, care Paper Trade Journal. A-25

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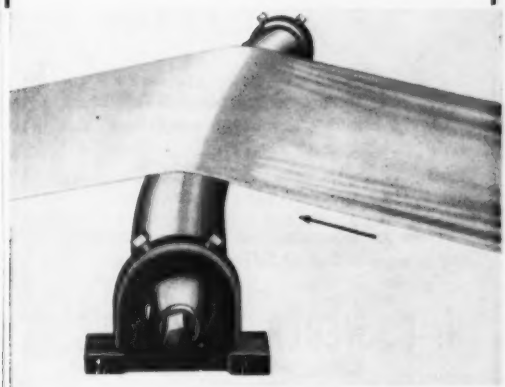

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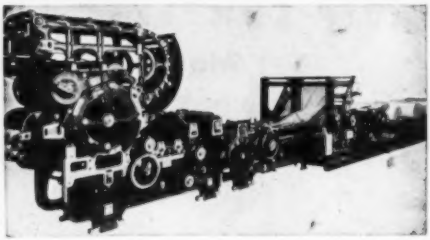

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Frederick Wierk

CONTROLLERS

Askania Regulator Company
Black-Clawson Co.
The Bristol Co.
The Brown Instrument Co.
Cochrane Corp.

CONTROLS

Askania Regulator Company
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Johnson Corp.
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

CONVEYORS

American Well Works
Black-Clawson Company
Chain Belt Company
Frederick Iron & Steel, Inc.
Industrial Brownhoist Corp.
Link Belt Company
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.

CORE CUTTERS

Suburban Machine Co.

CORES

Elixman Paper Co.
Hubbard Spool Co.
Rodney Hunt Machine Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.
Walker-Goulard-Plehn Co.

COUPLINGS

Black-Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

CRANES

Cleveland Crane & Engrg. Co.
Industrial Brownhoist Corp.
Link Belt Company
Whiting Corp.

CUP AND CONTAINER MACHINES

Mercury Engrg. Corp.

CUTTERS

Dilts Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Smith & Winchester Mfg. Co.
Taylor, Stiles & Co.

CYLINDERS
Askania Regulator Company
M. W. Jenkins Sons, Inc.
National Tube Co.

DAMPENERS
Perkins & Son, Inc., B. F
Valley Iron Works Co.

DECKLE WEBBING
Williams-Gray Co.

DE-INKING
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
Roderick O'Donoghue
Shartle Brothers Machine Co

DEINKING CHEMICALS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Midwest-Fulton Machine Co.
Monsanto Chemical Company
Philadelphia Quartz Co

DE-MINERALIZING EQUIPMENT
Hungerford & Terry, Inc.

DENSOMETERS
W. & L. E. Gurley

DESIGN CONSTRUCTION
Ebasco Services

DETERGENTS
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

DEWAXING CHEMICALS
General Dyestuff Corp.
Nopco Chemical Co.

DIGESTERS
Babcock & Wilcox Co.
The Biggs Boiler Works Co
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
Lukenweld
Pusey & Jones Corp.

DIRTEC
Bird Machine Co.

DISPERSING AGENTS
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.

DOCTORS
Bird Machine Company
Black-Clawson Company
Downingtown Mfg. Co.
Lobdell Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co

DOCTOR BLADES
Bird Machine Company
Black-Clawson Company
Lodding Engrg. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co

DRIERS
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc
Hardinge Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
The Youngstown Welding & Engrg. Co.

DRIVES
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Bird Machine Co.
Black-Clawson Company
Chain Belt Company
Davis, Frank H., Co.
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc
Rodney Hunt Machine Co
Link Belt Company
Moore & White Co.
Murray, D. J., Mfg. Co
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Syco Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp

DRYER DRAINAGE
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

DYESTUFFS
American Cyanamid Company, Calco Chemical Div.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.
C. K. Williams & Co.
Witco Chemical Co.

EMBOSSING ROLLS
The Appleton Machine Co
Frank W. Egan & Co.
Gibbs-Brower Company, Inc
The Midvale Company
Northern Engraving & Mch. Co
B. F. Perkins & Son, Inc.
John Waldron Corp.

EMULSIFIERS
Adell Chemical Company
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES
Rohm & Haas Co.

EVAPORATORS
Davis Engrg. Corp.
Foster Wheeler Corp.
Goslin Birmingham Mfg. Co. Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

EXPANDERS
Mount Hope Machinery Co

FANS
General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O

FEEDERS
Hardinge Company, Inc
Merrick Scale Mfg. Co
Leeds & Northrup

FELTS
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Bulkley, Dunton Pulp Co., Inc
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Mt. Vernon-Woodbury Mills Inc.
Morey Paper Mill Supply Co
Orr Felt & Blanket Co.
Shuler & Benningholen
Waterbury Felt Co.
Waterbury, H., & Sons Co
Williams-Gray Co.

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PARIS BLACKS

Carbon blacks for all paper and board stocks—outstanding soft texture, particle fineness and jet black color. Takes well to the fiber, shows high retention.

Best for performance in the Beater and Jordan because of ease of wetting and ready dispersion in the furnish.

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Single Instrument Measures Smoothness, Porosity and Softness of Paper

You just interchange the lower test plates in the GURLEY-HILL S-P-S Tester to convert it into an instrument for testing either smoothness, porosity or softness of any type of paper, by measuring a given air-leakage over or through the paper.

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WHERE TO BUY

FELT CLEANERS
Adell Chemical Company
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS
Bird Machine Co.

FELT GUIDES
Black-Clawson Co.
Frank W. Egan & Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

FILLERS
American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Witco Chemical Co.

FILTERS
Bird Machine Company
Cochrane Corp.
Hardinge Company, Inc.
Hungerford & Terry, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
Witco Chemical Co.
Walworth Company

FITTINGS
Crane Company
The Kuhns Bros. Co.
Phoenix Products Co.
Walworth Company

FLEXIBLE COUPLINGS
Ajax Flexible Coupling Co.
John Waldron Corp.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.

FORMING MACHINES
Black-Clawson Co.
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
Oliver United Filters, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FREENESS TESTERS
Testing Machines, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
American Manganese, Steel Div.
Black-Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES, WEB
Askania Regulator Company
The Moore & White Co.
Mount Hope Machinery Co.
Rennet-Brook Engrg. Co.
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works.

GUMS
National Starch Products Inc.
Stein-Hall Co., Inc.

HEADS
Babcock & Wilcox Co.
Lukens Steel Company

HEAT EXCHANGERS AND RECOVERY SYSTEMS
William Allen Son's Company
Davis Engrg. Corp.
Foster Wheeler Corp.
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
Armstrong Machine Works
Cochrane Corp.
Davis Engrg. Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
Minneapolis-Honeywell Regulator Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.
The Goodyear Tire & Rubber Company

IMPREGNANTS
American Anode Div., The B. F. Goodrich Chem. Co.

INDENTING MACHINES
Dilts Machine Works.

INDUSTRIAL TRACTORS
Clark Equipt. Co., Clark Tractor Div.
Towmotor Corp.

INK GRAVURE
Gotham Ink & Color Co.

INSTRUMENTS, TESTING AND MEASURING
Askania Regulator Company
Bauer Brothers Co.
N. P. Bowsher
The Bristol Company
The Brown Instrument Co.
E. J. Cady Company
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

JOINTS
Johnson Corp.
Perfecting Service Corp.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOT BORING MACHINES
DeZurik Shower Company

LABORATORIES
Timber Engrg. Co.

LABORATORY EQUIPMENT
William Allen Son's Company
Appleton Machine Co.
Bauer Brothers Co.
The Biggs Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.

LAMINATING MACHINES
Dilts Machine Works.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.
Suburban Machine Co.

LUBRICANTS
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler System).

MATERIALS HANDLING
Cleveland Crane & Engrg. Co.
Frank G. Hough Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
E. J. Cady Co.
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

MOISTURE CONTENT CONTROL
Askania Regulator Company
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Link Belt Company

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

PAINT
American Marietta Co., Valdura Division

PAPER MACHINES
Bagley & Sewall Co.
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Suburban Machine Co.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PENSTOCKS
The Biggs Boiler Works Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

PIPE
American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
Youngstown Welding & Engrg. Co.

PIPE FITTINGS
American Cast Iron Pipe Co.
The American Rolling Mill Co.
Crane Company
Ladish Company
Michigan Steel Casting Co.
Phoenix Products Co.
Walworth Co.

PIPE MARKERS
W. H. Brady Co.

PITCH CONTROL
General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
J. O. Ross Engrg. Corp.
Lukenweld
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PRECISION SAMPLE CUTTER
Testing Machines, Inc.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESSURE VESSELS, STEEL AND ALLOY
William Allen Son's Company
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
The Midvale Company

PRESSES
Black-Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULP CLASSIFIER
The Bauer Bros. Co.

PULP STOCK VALVES
Crane Company
Record Fdy. & Mach. Co.
Shartle Bros. Mach. Co.

PULPERS
American Paper Mchy. & Engrg. Works, Inc.
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.

PULPSTONES

Norton Company

PUMPS

Allis-Chalmers Mfg. Co.
American Manganese, Steel Div.
Black-Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Frederick Iron & Steel, Inc.
Gibbs-Brower Company, Inc.
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Paper Converting Mch. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company

RADIANT BURNERS

Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES

Adell Chemical Co.
William Allen Son's Company
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS

Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS

The Dorr Company

RECOVERY SYSTEMS

William Allen Son's Company
Babcock & Wilcox Co.
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS

The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

REFINERS

Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS

Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
DeZurik Shower Company
The Foxboro Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Midwest-Fulton Machine Co.
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

RESEARCH CHEMISTS

Timber Engrg. Co.

RESINS

American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

ROLLS

American Cast Iron Pipe Co.
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Edward J. McBride
The Midvale Company
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Philbrick Engrg. Corp.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

ROLL COVERS

The Cincinnati Rubber Mfg. Co.
The Goodyear Tire & Rubber Company
Edward J. McBride
Stowe-Woodward, Inc.

ROLL HANDLING EQUIPMENT

Dilts Machine Works (Kohler System).

ROLL STANDS

Cameron Machine Co.
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS

The Moore & White Co.

ROTARY BOILERS

The Biggs Boiler Works Co.

ROTARY STEAM JOINTS

Johnson Corp.
The Moore & White Co.
Perfecting Service Corp.

RUBBER PRODUCTS

The Goodyear Tire & Rubber Company

SATURANTS

American Anode Div., The B. F. Goodrich Chem. Co.

SATURATING MACHINES

Black-Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Noble & Wood Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS

Bird Machine Company
Hardinge Company

SCALES

Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

SCREEN PLATES

Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS

Allis-Chalmers Mfg. Co.
American Paper Mchy. & Engrg. Works, Inc.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SHEET MACHINES

Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Suburban Machine Co.
Valley Iron Works Co.

SHOWER PIPES

Bird Machine Company
DeZurik Shower Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

SHREDDERS

Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

SIZING

American Cyanamid Company, Industrial Chemicals Division
Black-Clawson Company
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Philadelphia Quartz Co.
Stein-Hall Co., Inc.

SIZING TESTER

W. & L. E. Gurley
Testing Machines, Inc.

SLIME CONTROL

W. A. Cleary Corp.
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.

SLITTERS

Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Machinery & Prod. Engrg. Corp.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS

William Allen Son's Company
The Biggs Boiler Works Co.

SPECIAL MACHINERY

Dilts Machine Works.

SPLICING TISSUE

Williams-Gray Co.

SOFTNESS-STIFFNESS TESTER

W. & L. E. Gurley
Testing Machines, Inc.

SOLUBLE OILS

Adell Chemical Company
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

SOLVENTS

Adell Chemical Company

STAINLESS STEEL

American Cast Iron Pipe Co.
Armco Steel Corp.
Michigan Steel Casting Co.
The Midvale Company
U. S. Steel Corp.

STARCH

American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Clinton Industries, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS

The Moore & White Co.

STEAM SPECIALTIES

Babcock & Wilcox Co.
Cochrane Corp.
Combustion Engrg. Co., Inc.
Davis Engrg. Corp.
Johnson Corp.
Midwest-Fulton Machine Co.
Perfecting Service Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

STEEL

Allegheny Ludlum Steel Corp.
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
Midvale Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD

Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS

William Allen Son's Company
The Biggs Boiler Works Co.

STRAPPINGS & STRAPPING MACHINES

The Stanley Works

STUFF CHESTS

Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES

Black-Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION UNIT

Paper & Industrial Appliances, Inc.

SULPHUR

American Cyanamid Company, Industrial Chemicals Division
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS

Valley Iron Works Co.

SULPHUR DIOXIDE

American Cyanamid Co., Calco Chemical Div.
Anaui Chemical Company
Virginia Smelting Co.

SUPERCALENDERS

The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES

American Anode Div., The B. F. Goodrich Chem. Co.
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

TACHOMETERS

The Brown Instrument Co.

TAKE-OFF UNITS

Dilts Machine Works (Kohler System).

TALC

American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.

TANKS

William Allen Son's Company
The Biggs Boiler Works Co.
Cochrane Corp.
Kalamazoo Tank & Silo Co.
The Noble & Wood Machine Co.
B. F. Perkins & Son, Inc.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Waldron Corp., John

TEARING TESTERS

Testing Machines, Inc.

TENSILE TESTERS

B. F. Perkins & Son, Inc.
Testing Machines, Inc.

WHERE TO BUY

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Bulkley, Dunton Pulp Co., Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Hardinge Co., Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Oliver United Filters, Inc.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

TIMBER ROOF TRUSS DESIGNS
Timber Engrg. Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witten Chemical Company

TOOLS
The Stanley Works
Walworth Company

TRACTOR SHOVELS
Frank G. Hough Co.

TRACTORS & TRUCKS
Frank G. Hough Co.
Towmotor Corp.
Clark Equipt. Co., Clark Tractor Div.

TRANSMISSIONS
Link Belt Company

TRAPS
Armstrong Machine Works
Cochrane Corp.
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works.

TUBING, MECHANICAL
National Tube Co.

TUBS
Rodney Hunt Machine Co.
Shartle Brothers
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.

TURPENTINE RECOVERY
Foster Wheeler Corp.

UNWINDERS
Dilts Machine Works (Kohler System).

USED EQUIPMENT
Frank H. Davis Company
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.
Suburban Machine Co.

VALVES
Askania Regulator Co.
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Crane Company
Dilts Machine Works
The Foxboro Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdr. & Mch. Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Trimbey Mach. Wks.
Valley Iron Works Co.
Walworth Company

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING EQUIPMENT
Alhydro, Inc.
The Dorr Company
Hungerford & Terry, Inc.

WATER CONDITIONING
Alhydro, Inc.
Calgon, Inc.
Cochrane Corp.
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.

WATER DISPERSIONS
Alhydro, Inc.
American Anode, Inc.
Rohm & Haas Co., Resinous Products Div.

WATER FINISH EQUIPMENT
Dilts Machine Works.

WATER SOFTENERS
Hungerford & Terry, Inc.

WAXES
Hercules Powder Co.

WAXING MACHINERY
Black-Clawson Co.
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler System).

WELDING EQUIPMENT
General Electric Company
Walworth Company

WET MACHINES
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WETTING AGENTS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

WHITE WATER HEATERS, AUTOMATIC SELF CLEANING TYPE
Davis Engineering Corp.

WHITE WATER TREATING EQUIPT.
Hungerford & Terry, Inc.

WINDERS AND REWINDERS
The Appleton Machine Co.
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler System).

WIRE BRUSHES
M. W. Jenkins Sons Inc.

WIRES
Appleton Wire Works
Bulkley, Dunton Pulp Co., Inc.
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

WIRE BRUSHES
Williams-Gray Co.

WOOD SPLITTERS
The Appleton Machine Co.
Carthage Machine Co.

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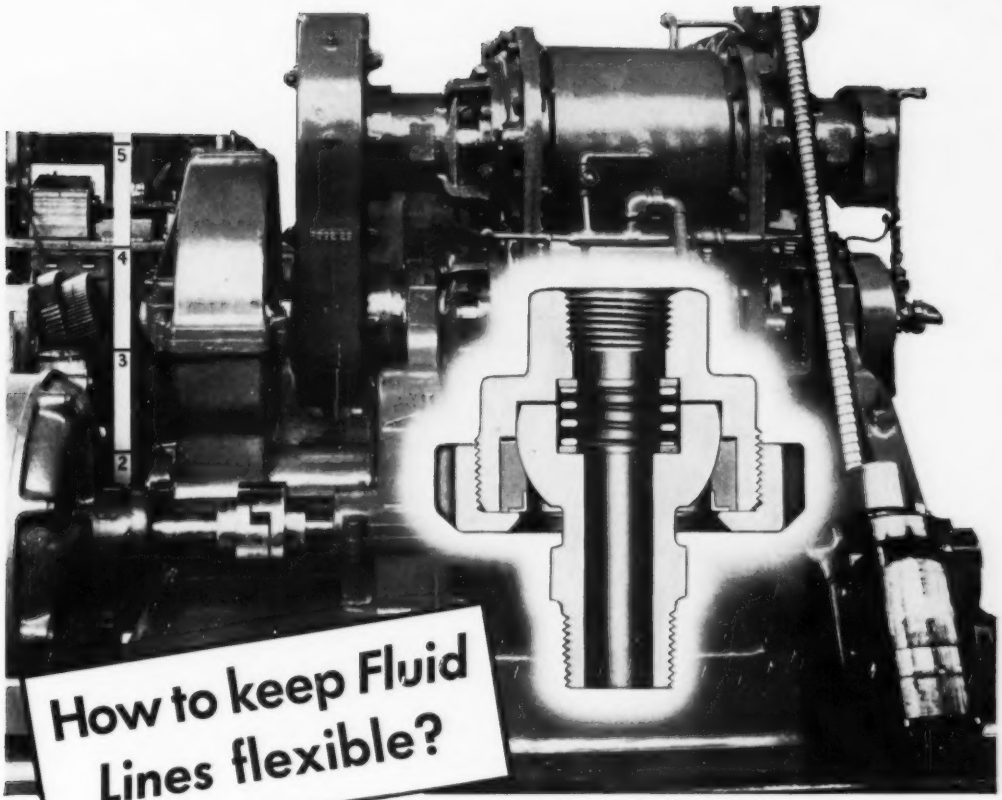

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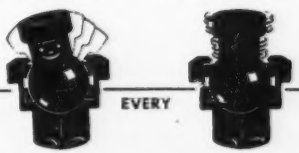

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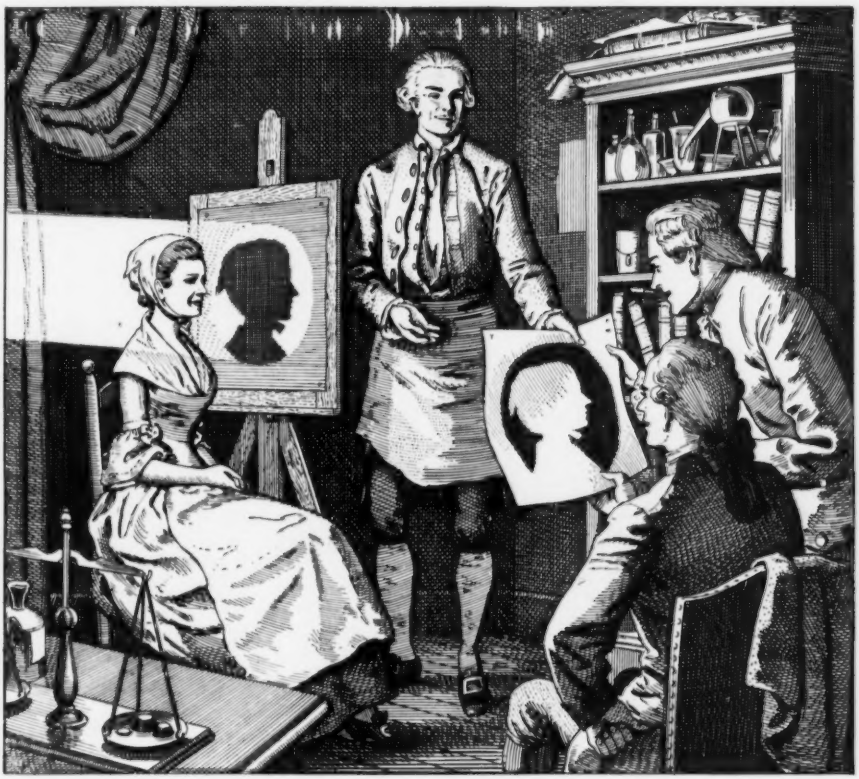

The Secret Born in a Darkroom

In 1802 two Englishmen—Thomas Wedgwood and Sir Humphry Davy—published a paper that was to make history. They described how, in a darkened room, they had made profiles by casting shadows on paper moistened with nitrate of silver. But when exposed to light the silhouettes soon disappeared. Not until 1835 did another Englishman, W. H. Fox Talbot, devise a way to make a photographic image permanent. And it was more than a half-century later that George Eastman introduced his first small hand-held camera, followed it with transparent, flexible roll film and special papers, and made photography available to all.

Modern photography has vastly expanded printing and publishing, and has increased enormously the uses of paper in business, education, government, science, and the arts. Thus the secret born in a darkroom greatly stimulated the growth of America's paper industry.

The dramatic story of paper is told in the sound-and-color film, "Paper — Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

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